A

Appendix A: Calpine's Application for Transmission Interconnection

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CALPINE

LM6000 Gilroy / Electrical Interconnection

WESTERN REGION OFFICE
6700 KOLL CENTER PARKWAY
SUITE 200
PLEASANTON, CALIFORNIA 94566
925.600.2000
925.600.8924 (FAX)

March 14, 2001

Mr. Art McAuley
Pacific Gas and Electric Company
Mail Code B13J
PO Box 77000
San Francisco, CA 94177-0001

RE: Interconnection Application and Transmission Request for the Gilroy LM6000 Peaker Project

Dear Art:

In compliance with PG&E's procedures, Calpine is submitting this Application on behalf of the Gilroy LM6000 Peaker Project to establish a priority in PG&E's queue for interconnections and transmission service. The proposed project includes the installation of six (6)General Electric LM6000 gas turbines configured to feed power into the LLAGAS substation in Gilroy, CA.

Pursuant to section 10.2 of PG&E's TO Tariff, Calpine requests that PG&E treat the information contained in this Application, including without limitation the information contained in the Generator Interconnection Data Sheet, as confidential. Please acknowledge receipt of this Application by contacting Brian McDonald at (925) 600-2007.

Calpine's preliminary assumptions indicate that this project will only minimally impact PG&E's transmission system. To ensure that Calpine's preliminary analysis comports with that of PG&E, Calpine requests that representatives of Calpine and PG&E meet expeditiously to take a preliminary look at the project, and to discuss the study assumptions to be used in the System Impact Study ("SIS).

To the extent that the parties' preliminary discussions result in the parties identifying and agreeing upon adjustments to be made to the project, such as those that would lower costs, increase generation, mitigate environmental impacts, etc., Calpine expects that PG&E will incorporate such adjustments into the study assumptions used in the SIS.

Calpine further expects that this project will retain its original queue position not withstanding such modifications, as long as the project remains the same size and uses the same transmission configuration as set forth in the jointly developed study assumptions for the SIS. Calpine looks forward to working with PG&E to maximize the benefits of the Gilroy LM6000 project for all California consumers

Very Sincerely,

CALPINE CORPORATION

Brian McDonald

Brian McDonald
Calpine Corporation
Manager of Project Development

Cc: California Independent System Operator, Jeff Miller
California Independent System Operator, Peter Macklin
Alexandre B. Makler
~~Darin Stuhlmuller~~
Bryan Bertacchi
Alan Roth

Pacific Gas and Electric Company™

WE DELIVER ENERGY.℠

Generator Interconnection Data Sheet

For Wholesale Generators Connected

to the PG&E Electric System

at Voltages 60 kV and Above

August 3, 2000

Generator Interconnection Data Sheet

Note: Generators who are submitting a Completed Application pursuant to PG&E's Transmission Owners Tariff must completely fill out this Generator Interconnection Data Sheet as an integral part of their application.

1. General Project Information

A. Project Name: GILROY ENERGY
Street Address: 1400 PACHECO PASS HWY, GATE 1
City, State: GILROY, CA
Zip Code: 95020
Phone Number: 408 847-5328
Fax Number: 408 847-1088
Email Address:

B. Developer Name: CALPINE
Street Address: 6700 KOLL CENTER PARKWAY, SUITE 200
City, State: PLEASANTON, CA
Zip Code: 94566
Phone Number: 925 600-2000
Fax Number: 925 485-3746
Email Address: bmcdonald@calpine.com

C. Site Owner Name: SAME AS B
Street Address:
City, State: ,
Zip Code:
Phone Number:
Fax Number:
Email Address:

D. The anticipated operation date: PHASE 1 7/31/01
PHASE 2 4/01/02

NOTE: PHASE 1 WILL INCLUDED AS MANY GENERATORS AS CAN BE INSTALLED WITHOUT REQUIRING UPGRADES TO PG&E'S TRANSMISSION SYSTEM. THIS IS ANTICIPATED TO BE BETWEEN 2 AND 4 GENERATORS.

2. Type of Project (select one)

Cogeneration	____	Reciprocating. Engine	____
Biomass	____	Steam Turbine	____
Gas Turbine	X	Wind	____
Hydro	____	Other Describe: ________	____
Photovoltaic	____		

3. Maximum generator power delivered to PG&E grid at Point of Interconnection

Generator rated output	+	50,000	kW	EACH
Less generator auxiliary load:	-	1,300	kW	EACH
Maximum net power delivered to PG&E Grid:	=	48,700	kW	EACH
Standby load to be served when generator is OFF:		650	kW	

4. Generator Information

A. Manufacturer: BRUSH

B. Year Manufactured: ________

C. Rated Size:

- kW: 60,500
- KVA: 71,176
- Terminal Voltage: 13.8 KV
- Power Factor (%): 0.85

D. Type: (select one)

- Induction: ____
- Synchronous: X
- D.C. with Inverter: ____

E. Synchronizing

- Auto: X
- Manual: ____
- Relay Supervision (y/n): Y

F. Voltage:

- Output: 13.8 kV
- Interconnection: 115 kV

G. Phase: (select one)

- 1ϕ: ____
- 3ϕ: X

H.	Connection (select one)	Delta	______
	RESISTANCE	Grounded WYE	X
		Ungrounded	______
I.	Inertia Constant (if known)	57,059	lb-ft^2
J.	Generator Voltage Regulation Range	+/- 5%	
K.	Generator Power Factor Regulation Range	0.85 LAG - 0.95 LEAD	

5. Generating Grounding

If the generator output is greater than 40kW (individually or as an aggregate group), ground protection will be required. If grounding will be required, please indicate type of ground detection below:

Wye Grounded/Delta Ground Bank with Overcurrent Relay	______
Wye Grounded/Broken Delta[1]: Ground Bank with Low Pick-up Overvoltage Relay	______
Current Transformer with Overcurrent Relay: In Neutral of Dedicated Transformer	X
Potential Transformer with Voltage Relay[1]: In Neutral of Dedicated Transformer	______
Other: ______________________	______

[1] This is PG&E's preferred ground detection.

6. Step-Up Transformer Data

A. Rated MVA 90/120/150 MVA

B. Cooling Type OA/FA/FA

C. Impedance - Z 8.5 % Impedance

D. Primary Voltage 13.8 kW

Secondary Voltage 115 kW

E. Available H.V. Taps

Available H.V. Taps		Available L.V. Taps	
120.75	kV		kV
117.88	kV		kV
115.00	kV		kV
112.13	kV		kV
109.25	kV		kV
	kV		kV

F. Please indicate present tap settings: H.V Tap: 115.0 kV

L.V Tap: 13.8 kV

G. Does transformer have tap changing under load? NO

H. Is transformer a regulating-type transformer? NO

If yes, please indicate regulating voltage range and the number of steps.

_____ kV to _____ kVNumber of steps _____

I. Please indicate how the transformer windings are connected:

H.V. Side:		L.V. Side:	
___	Wye	___	Wye
X	Grounded Wye	___	Grounded Wye
___	Delta	X	Delta

J. Transformer Fuse Type: _____ Size _____

K. If the transformer test report is not available, please provide the following impedances using the MVA base given in (10.A) above:

R_T	per unit resistance	0.004	pu
X_T	per unit reactance	0.085	pu
B_T	per unit magnetizing susceptance		pu
G_T	per unit core loss conductance		pu

L. Other comments regarding the transformer?

THREE WINDING XFMR SERVING TWO GENERATORS

M Desired transformer connection:

	Delta	Grounded Wye	Ungrounded Wye
PG&E Side		X	
Generator Side	X		

7. Please provide two original prints and one reproducible copy (no larger than 36" x 24") of the following:

A. SITE DRAWING to scale, showing generator location and point of interconnection with PG&E.

B. For generation greater than 1000 kW provide the following:
   1) Substation grounding drawings showing all ground connections.
   2) A list of the amount and location of the shunt capacitor compensation that will be provided (induction generators only).

C. SINGLE LINE DIAGRAM, showing switches/disconnects of the proposed interconnection, including the required protection devices and breakers.

D. THREE LINE DIAGRAM, showing the proposed CTS and PTs as they are connected to the relays and meters.

E. DESCRIPTION of operation and elementary drawings, showing the synchronization (if appropriate), and tripping of breakers by the required relays. (If not provided, they may be requested after approval of the single and three line diagrams.)

F. LIST of relays, switches and revenue meters (if customer provided), disconnects, etc., specified to meet the requirements of PG&E's Interconnection Handbook and include the following information:.
   1) Manufacturer's name and model number, with each device listed.
   2) Range of available settings.
   3) Proposed settings.
   4) Ratio of associated current and potential transformers. If multi-ratio, state the available ratios and which one is proposed.

8. Proposed breaker(s) will be equipped with[2]:

Undervoltage Release ________

D.C. Trip ___X___

9. The following information is required for Induction Generators only.

Do you wish reclose blocking? Yes ___, No ___

Note: we test automatically. Sufficient capacitance may be on the line now, or in the future, and your generator may self-excite unexpectedly.

[2] Capacitor Trip is not acceptable.

Information contained in Sections 10 through 15 is required only for Synchronous Generators. It is acceptable to provide IEEE block diagrams for the dynamic data specified in Sections 10 through 15.

10. Synchronous Generator – General Data:

A.	Rated Generator speed	3600	rpm
B.	Number of Poles	2	
C.	Rated Generator Power Factor	0.85 LAG - 0.95 LEAD	
D.	Generator Efficiency at Rated Load		%
E.	Moment of Inertia (Turbine plus Generator) ωR^2	57,059	$lb\text{-}ft^2$
F.	Inertia Time Constant (on machine base) H:	2.4	sec or MJ/MVA
G.	SCR (Short-Circuit Ratio - the ratio of the field current required for rated open-circuit voltage to the field current required for rated short-circuit current.	0.48	
H.	Typical Generator Auxiliary Load		MW
I.	Maximum Power Output		MW
J.	Please attach generator reactive capability curves. If these curves are not available, provide the maximum and minimum reactive limits	Q_{MAX}: 37.5	MVAR, lagging
		Q_{MIN}: 22.2	MVAR, leading
K.	Rated Hydrogen Cooling Pressure (Steam Units only)		psig
L.	Please attach a simple one-line diagram that includes the generator step-up transformer bank, plant load, meter, and transmission-level bus.		
M.	Please attach a plot of generator terminal voltage versus field current that shows the air gap line, the open-circuit saturation curve, and the saturation curve at full load and rated power factor.		

11. Synchronous Generator – Impedence:

A.	X_d	direct-axis unsaturated synchronous reactance	2.35	pu
B.	X_q	quadrature-axis unsaturated synchronous reactance	2.15	pu
C.	X'_d	direct-axis unsaturated transient reactance		pu
D.	X'_{ds}	direct-axis saturated transient reactance	0.20	pu
E.	X'_q	quadrature-axis unsaturated transient reactance		pu
F.	X'_{qs}	quadrature-axis saturated transient reactance	0.24	pu
G.	X''_d	direct-axis unsaturated subtransient reactance		pu
H.	X''_{ds}	direct-axis saturated subtransient reactance	0.144	pu
I.	X''_q	quadrature-axis unsaturated subtransient reactance		pu
J.	X''_{qs}	quadrature-axis saturated subtransient reactance	0.17	pu
K.	X_L	stator leakage reactance or Potier reactance		pu

L.	R_a	armature resistance		pu
M.	X_2	negative sequence reactance (saturated/unsaturated)	/0.176	pu
N.	X_0	zero sequence reactance (saturated/unsaturated)	/0.095	pu

12. Synchronous Generator – Time Constants:

A.	T_{q0}	direct-axis transient open-circuit time constant	9.7	sec
B.	T'_{q0}	quadrature-axis open-circuit time constant		sec
C.	T''_{q0}	direct-axis subtransient open-circuit time constant	0.05	sec
D.	T''_{q0}	quadrature-axis subtransient open-circuit time constant		sec
E.	$T_{A\,GEN}$	armature short-circuit time constant		sec
F.	T'_D	direct-axis transient short-circuit time constant	0.65	sec
G.	T'_Q	quadrature-axis transient short-circuit time constant		sec
H.	T''_D	direct-axis subtransient short-circuit time constant	0.04	sec
I.	T''_Q	quadrature-axis subtransient short-circuit time constant		sec

13. Excitation System Information

Please indicate, in the space provided on the left, the excitation system used for your generator.

A. Rotating DC commutator exciter with continuously acting regulator. The regulator power source is independent of the generator terminal voltage and current.

Manufacturer ____________________, Type ____________________

B. Rotating DC commentator exciter with continuously acting regulator. The regulator power source is bus fed from the generator terminal voltage.

Manufacturer ____________________, Type ____________________

C. Rotating DC commutator exciter with non-continuously acting regulator (i.e., regulator adjustments are made in discrete increments).

Manufacturer ____________________, Type ____________________

D. Rotating AC Alternator Exciter with non-controlled (diode) rectifiers. The regulator power source is independent of the generator terminal voltage and current (not bus-fed).

Manufacturer ____________________, Type ____________________

E. Rotating AC Alternator Exciter with controlled (thyristor) rectifiers. The regulator power source is fed from the exciter output voltage.

Manufacturer ____________________, Type ____________________

F. Rotating AC Alternator Exciter with controlled (thyristor) rectifiers.

Manufacturer ____________________, Type ____________________

G. Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from the generator terminal voltage.

Manufacturer BRUSH, Type ST-1

H. Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from a combination of generator terminal voltage and current (compound-source controlled rectifiers system.

Manufacturer ____________________, Type ____________________

I. Please attach a copy of the instruction manual for your excitation system. Make sure that a block diagram or schematic of the excitation system is included in the manual. The diagram should show the input, output, and all feedback loops of the excitation system.

J. If the manufacturer's data for the excitation system (i.e., time constants, gains, and saturation curves) are available, please attach these also.

K. What is the excitation system response ratio (ASA)?

L. What is the rated exciter output voltage at full load? 186 volts

M. What is the maximum exciter output voltage (ceiling voltage)? __________ volts

N. Other comments regarding the excitation system?

14. Power System Stabilizer Information (supplementary excitation system)

(Note: Complete this section only if your machine has PSS control.)

A. Manufacturer: BRUSH

B. Is your PSS digital or analog? ANALOG

C. What is the actuating signal (the input signal) for your PSS?

_____ Bus frequency _____ Shaft slip X Accelerating power _____ Other

If "Other", indicate signal ____________________.

D. Please attach a copy of the instruction manual for your PSS. The manual should include a block diagram or schematic of the PSS and the correspondence between dial settings and the time constants or PSS gain.

E. Please attach a copy of the test report for your PSS. This report should contain the dial settings or time constants and PSS gain. If this report is not available, write the dial settings below:

1.)	T_1	washout or reset time constant dial setting	______
2.)	T_2	first lead time constant dial setting	______
3.)	T_3	first lag time constant dial setting	______
4.)	T_4	second lead time constant dial setting	______
5.)	T_5	second lag time constant dial setting	______
6.)	K	PSS gain dial setting	______
7.)	V_{max}	maximum PSS output dial setting	______
8.)	V_{cut}	dial setting for which PSS is set to zero when generator terminal voltage deviation is too large	______
9.)	Other	______	______
10.)	Other	______	______

F: Other comments regarding the PSS?

______
______
______
______
______
______

15. Turbine-Governor Information

Please complete Part A for steam, gas or combined-cycle turbines, Part B for hydro turbines, and Part C for both.

A. Steam, gas or combined-cycle turbines:

1.) Steam turbine, Gas turbine, or Combined-cycle GAS TURBINE

2.) If steam or combined-cycle, does the turbine system have a reheat process (i.e., both high- and low-pressure turbines)? ______

3.) If steam with reheat process, or if combined-cycle, indicate, in the space provided, the percent of full load power produced by each turbine:

by low pressure turbine or gas turbine: ______ %

by high pressure turbine or steam turbine: ______ %

B. Hydro turbines:

1.)	What is the turbine efficiency at rated load?	______	%
2.)	What is the length of the penstock?	______	ft
3.)	What is the average cross-sectional area of the penstock	______	ft^2
4.)	What is the typical maximum head (vertical distance from the bottom of the penstock, at the gate, to the water level)?	______	ft
5.)	Is the water supply run-of-the-river or reservoir?	______	
6.)	What is the water flow rate at the typical maximum head?	______	ft^3/sec
7.)	What is the average energy rate?	______	kW-hrs/acre-ft
8.)	What is the estimated yearly energy production?	______	kW-hrs

C. Complete this section for each machine, independent of the turbine type.

1.)	Turbine manufacturer	GE	
2.)	Maximum turbine power output	50	MW
3.)	Minimum turbine power output (while on line)	50	MW
4.)	Governor information:		
	a: Droop setting (speed regulation)	5%	
	b: Is the governor mechanical-hydraulic or electro-hydraulic? (Electro-hydraulic governors have an electronic speed sensor and transducer.)	ELECTRO - HYDRAULIC	

c: Please provide below any time constants you have from the manufacturer describing the speed response of the governor. Be sure to identify each time constant.

______	______	sec
______	______	sec
______	______	sec

d: Other comments regarding the turbine governor system?

______

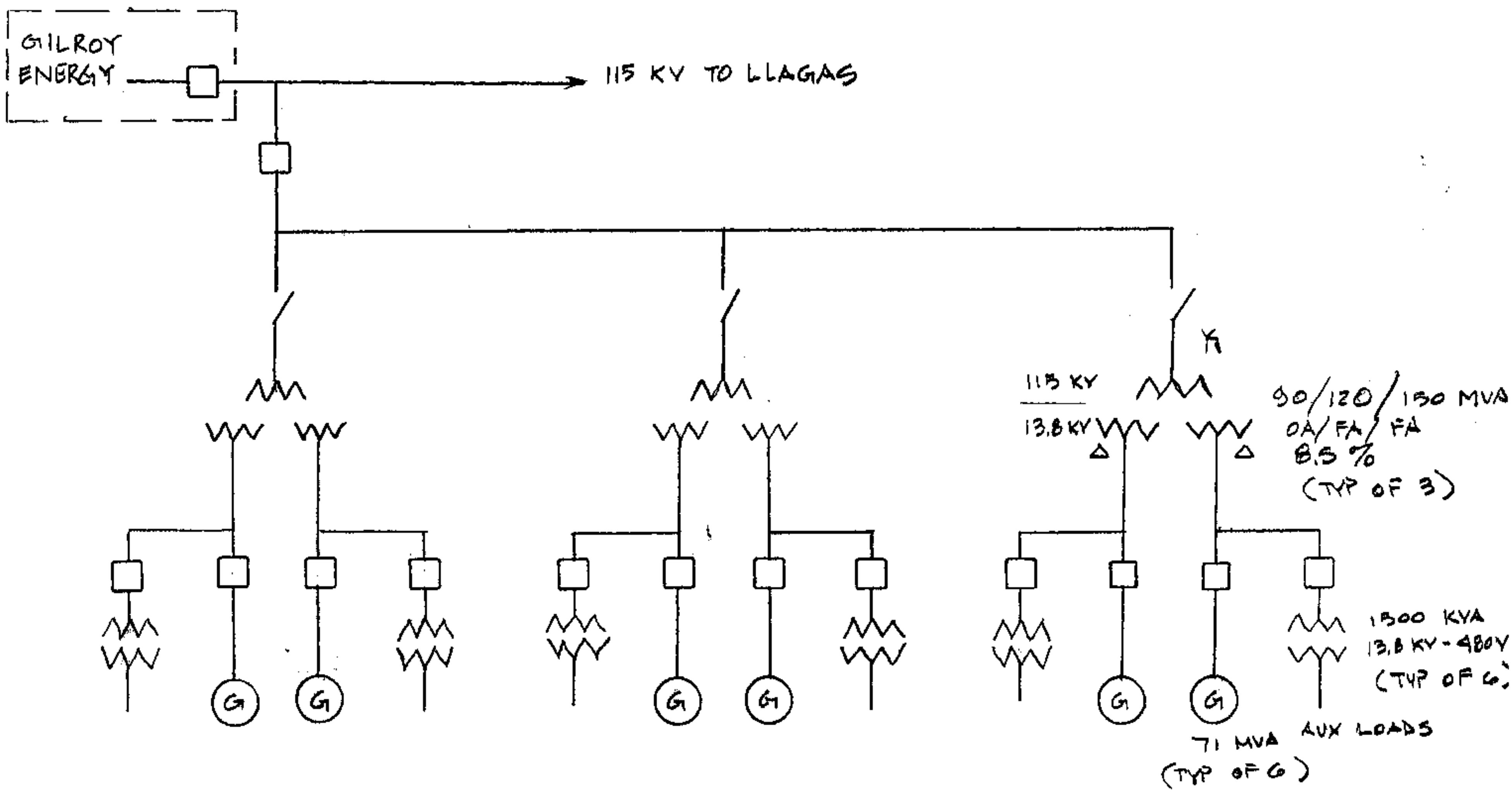
______

______

______

Completed By: ALAN ROTH, Date: 3/13/01

Phone Number: 925 600-2085, Fax Number: 925 485-3796 Email address: ALANR@CALPINE.COM


GILROY ENERGY
115 KV TO LLAGAS
115 KV
13.8 KV
90/120/150 MVA
OA/FA/FA
8.5 %
(TYP OF 3)
1500 KVA
13.8 KV - 480Y
(TYP OF 6)
71 MVA
(TYP OF 6)
AUX LOADS

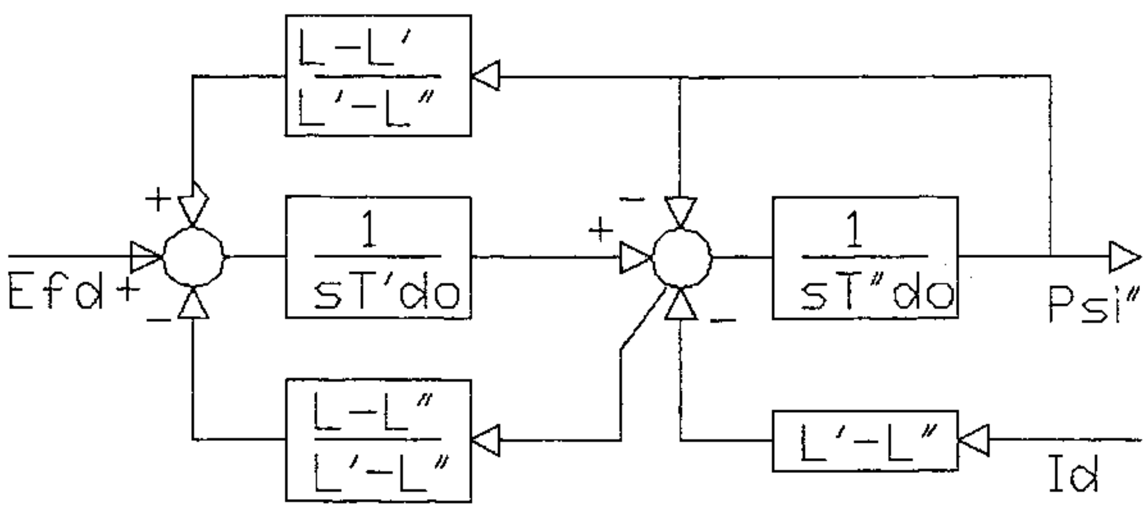
AJR 3/13/01

Additional
Information

Sent to PG&E
RE: GILROY

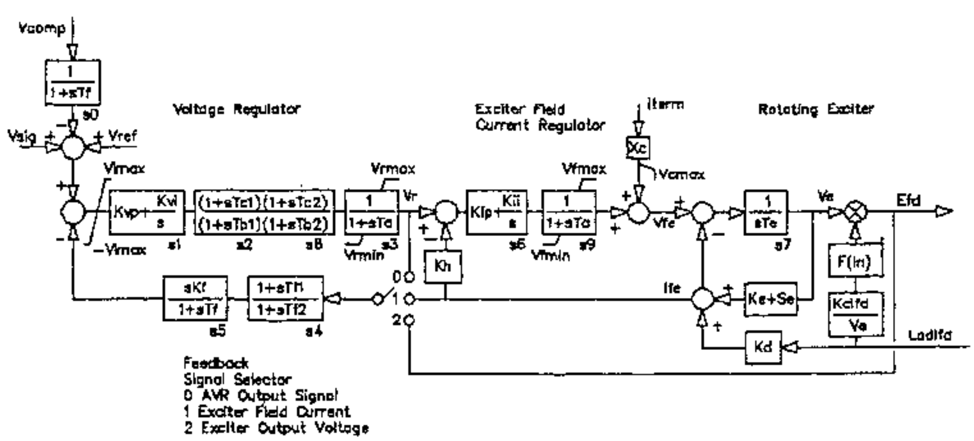
Gas Turbine Generator Data - GENTPF Model

Name	Description	
T'do	D-axis transient rotor time constant	9.7
T"do	D-axis subtransient rotor time constant	0.05
T'qo	Q-axis transient rotor time constant	2.9
T"qo	Q-axis subtransient rotor time constant	0.05
H	Inertia constant, sec	1.5
D	Damping factor, pu	0.
Ld	D-axis synchronous reactance	2.35
Lq	Q-axis synchronous reactance	2.15
L'd	D-axis transient reactance	0.2
L'q	Q-axis transient reactance	0.24
L"d	D-axis subtransient reactance	0.14
L"q	Q-axis subtransient reactance	0.14
Ll	Stator leakage reactance, pu	0.07
Se(1.0)	Saturation factor at 1 pu flux	0.11
Se(1.2)	Saturation factor at 1.2 pu flux	0.4
Ra	Stator resistance, pu	0.
Rcomp	Compounding resistance for voltage control, pu	0.
Xcomp	Compounding reactance for voltage control, pu	0.
accel	Acceleration factor for network solution	0.5



Gas Turbine Excitation System Data - REXS Model

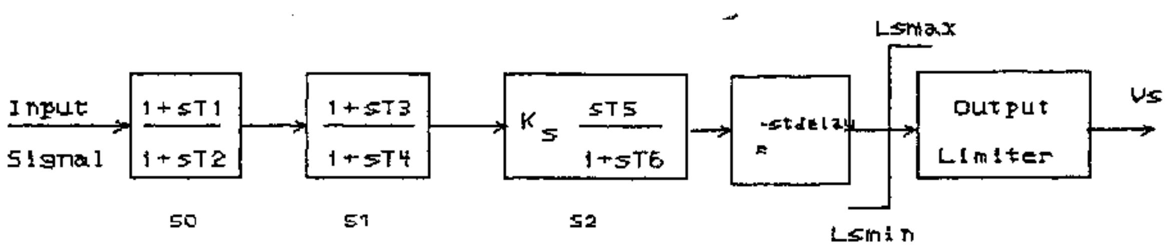
tr	Voltage transducer time constant, sec	0.
kvp	Voltage Regulator Proportional Gain	2840
kvi	Voltage Regulator Integral Gain	0.
vimax	Voltage Regulator Input Limit, p.u.	0.2
ta	Voltage Regulator time constant, sec	.02
tb1	Lag time constant, sec	0
tc1	Lead time constant, sec	0
tb2	Lag time constant, sec	0
tc2	Lead time constant, sec	0
vrmax	Maximum controller output, p.u.	40.
vrmin	Minimum controller output, p.u.	0
kf	Rate feedback gain,	.01
tf	Rate feedback time constant, sec	.6
tf1	Feedback lead time constant, sec	1
tf2	Feedback lag time constant, sec	1
fbf	Rate feedback signal flag	1.
kip	Field Current Regulator Proportional Gain	1.
kii	Field Current Regulator Integral Gain	0.
tp	Field current Bridge time constant, sec	0.
vfmax	Maximum Exciter Field Current, p.u.	40.
vfmin	Minimum Exciter Field Current, p.u.	0.
kh	Field voltage controller feedback gain	0.
ke	Exciter field proportional constant	1.
te	Exciter field time constant, sec	1.2
kc	Rectifier regulation factor, p.u.	0.15
kd	Exciter regulation factor, p.u.	1.78
e1	Exciter flux at knee of curve, p.u.	2.4
se1	Saturation factor at knee	0.001
e2	Maximum exciter, p.u.	3.2
se2	Saturation factor at max flux	0.01
rcomp	Regulator compensating resistance, p.u.	0.
xcomp	Regulator compensating reactance, p.u.	0.
nvphz	Pickup speed of v/Hz limiter, p.u.	.975
kvphz	V/Hz limiter gain	2.
flimf	Limit type flag	0.
xc	Exciter compounding reactance, p.u.	0.
vcmax	Maximum compounding voltage, p.u.	99.



Gas Turbine Stabilizer Data - IEEEST Model

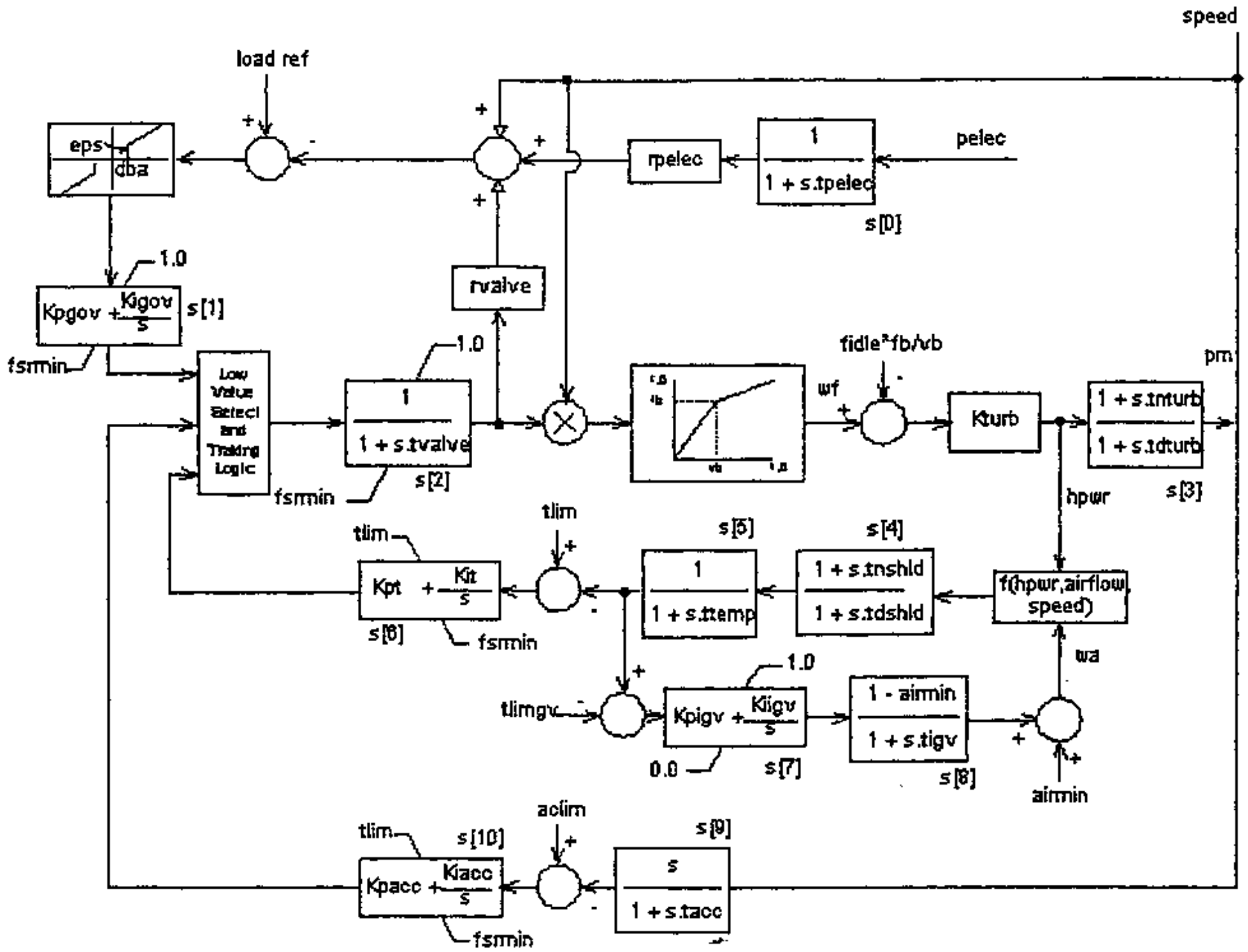
j	Input signal code	1
k	Remote signal bus number	0
A1-A6	Notch filter parameters	All zero
T1	Lead/lag time constant, sec	.3
T2	Lead/lag time constant, sec	.03
T3	Lead/lag time constant, sec	.3
T4	Lead/lag time constant, sec	.03
T5	Washout numerator time constant, sec	3
T6	Washout denominator time constant, sec	3
Ks	Stabilizer gain	2
Lsmax	Maximum stabilizer output, p.u.	.1
Lsmin	Minimum stabilizer output, p.u.	-.1
Vcu	Stabilizer input cutoff threshold, p.u.	.1
Vcl	Stabilizer input cutoff threshold, p.u.	-.1
Tdelay	Time delay, sec.	0.

signal	j
speed	1
freq	2
power	3
acc pwr	4
voltage	5
branch current	7



Gas Turbine Governor Data - GASP Model

Data	Standard Data Flag	3.
rvalve	Governor Permanent droop, valve position feedback, pu	0.
rpelec	Governor Permanent droop, electrical power feedback, pu	0.05
tpelec	Electrical Power Transducer time constant, sec	5.
kturb	Turbine gain, pu	1.5
tnturb	Turbine numerator time constant, sec	2.5
tdturb	Turbine denominator time constant, sec	3.0
ta	Fuel valve time constant, sec	0.2
ropen	Maximum valve opening rate, sec	1.
rclose	Maximum valve closing rate, sec	-99.
fidle	Full-speed no-load fuel flow, pu	0.18
fsrmin	Minimum allowable valve opening, pu	0.15
vb	Valve opening at valve breakpoint, pu	1.
fb	Fuel flow at valve breakpoint, pu	1.
kpgov	Governor proportional gain, pu	10.
kigov	Governor integral gain, pu	2.
tlim	Load at exhaust temperature limit, pu	1.
tnshld	Radiation sheild numerator time constant, sec	1.
tdshld	Radiation sheild denominator time constant, sec	4.
ttemp	Temperature transducer time constant, sec	1.5
kpt	Temperature limit controller proportional gain,	5.
kit	Temperature limit controller integral gain,	1.
aclim	Acceleration limit, pu speed/sec	1.
tacc	Acceleration detector time constant, sec	0.2
kpacc	Acceleration limit controller proportional gain,	5.
kiacc	Acceleration limit controller integral gain,	10.
kpigv	IGV controller proportional gain,	5.
kiigv	IGV controller integral gain,	1.25
tigv	IGV actuator time constant, sec	1.
tlimgv	IGV temperature limit, pu	0.1
afmin	Minimum air flow at minimum IGV position, pu	0.8
rrmax	Maximum rate of change of speed reference, pu/sec	0.001
dba	Input deadband parameter, pu	0.
eps	Input deadband parameter, pu	0.
dbb	Valve actuator backlash parameter, pu	0.


speed
load ref
eps
dba
rpelec
1
1 + s.tpelec
pelec
s[0]
1.0
Kpgov + Kigov/s
s[1]
fsrmin
rvalve
Low Value Select and Tracking Logic
1.0
1
1 + s.tvalve
s[2]
fsrmin
fidle*fb/vb
wf
Kturb
1 + s.tmturb
1 + s.tdturb
pm
hpwr
s[3]
tlim
s[5]
s[4]
tlim
Kpt + Kit/s
1
1 + s.ttemp
1 + s.tnshld
1 + s.tdshld
f(hpwr,airflow, speed)
s[6]
fsrmin
wa
1.0
tlimgv
Kpigv + Kiigv/s
1 - airmin
1 + s.tigv
0.0
s[7]
s[8]
airmin
aclim
tlim
s[10]
s[9]
Kpacc + Kiacc/s
s
1 + s.tacc
fsrmin

B

Appendix B: Calpine's Application for Fuel Interconnection

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CALPINE

WESTERN REGION OFFICE
6700 KOLL CENTER PARKWAY
SUITE 200
PLEASANTON, CALIFORNIA 94566
925.600.2000
925.600.8924 (FAX)

February 23, 2001

Mr. Rod Boschee
Pacific Gas & Electric Company
Mail Code: B16A
P.O. Box 770000
San Francisco, CA 94177

Subject: LM6000 Gas Interconnection Study Request

Dear Mr. Boschee:

Calpine is requesting the services of PG&E to study the gas system impact for the addition of 11 LM6000 Gas Turbines at four locations in Northern California. We have enclosed the following documents to initiate your services.

1. Detailed scope of work/deliveries
2. Preliminary Application for Gas Service
3. An updated Cogen/Power Plant Interconnection Information sheet for each facility.
4. An advance of $20,000 each, for Watsonville, King City and Gilroy; and $25,000 for the Greenleaf II site.

If you have any questions or need additional information during the course of your study, please contact me. My contact information is listed below:

- Direct office phone: (925) 600-2007
- Cell phone: (925) 989-7908
- Fax: (925) 600-0862
- E-mail: bmcdonald@calpine.com

I look forward to seeing the results of your analysis, as it is a key step in our effort to bring new generation capacity quickly into California.

Respectfully yours,
CALPINE CORPORATION

Brian McDonald

Brian McDonald
Manager, Project Development

Enclosures

cc: Mike O'Brien
Gary Lavering
Darin Stuhlmuller
Jeff Phillips
Bryan Bertacchi
Duncan Brown
Brad Barnds

CALPINE CORPORATION
50 W. San Fernando Street San Jose, CA 95113

Vendor No.	Check Date	Check No.
0000001844	02/14/2001	00114246

Invoice Number	Invoice Date	Voucher ID	PO Number	Gross Amount	Discount	Paid Amount
CKRQ021201 WRO	02/12/2001	00011147		85,000.00	0.00	85,000.00

Vendor Name	PG&E	Total Amount Paid	85,000.00

REMOVE DOCUMENT ALONG THIS PERFORATION

THIS DOCUMENT IS PRINTED IN TWO COLORS. DO NOT ACCEPT UNLESS BLUE AND BROWN ARE PRESENT.

CALPINE CORPORATION
50 W. San Fernando Street
San Jose, CA 95113
408-995-5115

UNION BANK OF CALIFORNIA, N.A.
California, Oregon, Washington

24-6
1230

CHECK NUMBER
00114246

PAY ONLY 85000 00

DATE
02/14/2001

AMOUNT
****$85,000.00

PAY Eighty five thousand and 00/100 Dollars

TO THE ORDER OF
PG&E
MAIL CODE B16A
PO BOX 770000
SAN FRANCISCO, CA 94177

Authorized Signature

⑈0114246⑈ ⑆123000068⑆ 9070874102⑈

I. Scope of Work:

"LM 6000 Gas Interconnection Study"

(Note: all fuel loads are cited on an HHV basis below)

1. Calpine Monterey Cogeneration Facility in Watsonville:

   - Option A: Increase Total Load by 470 MMBtu/hr @ 300 psig year round.
   - Option B: Increase Total Load by 1410 MMBtu/hr @ 300 psig year round.
   - PG&E fixed cost $20,000

2. Calpine Gilroy Cogeneration in Gilroy:

   - Option A: Increase Total Load by 470 MMBtu/hr @ 300 psig year round.
   - Option B: Increase Total Load by 2820 MMBtu/hr @ 300 or 725 psig year round.
   - PG&E fixed cost $20,000

3. Calpine Greanleaf, Inc., Unit 2 in Yuba City:

   - Option A: Increase Total Load by 470 MMBtu/hr @ 725 psig year round.
   - PG&E fixed cost $25,000

4. Calpine King City Power Plant in King City:

   - Option A: Increase Total Load by 295 MMBtu/hr @ 300 or 725 psig year round.
   - Option B: Increase Total Load by 470 MMBtu/hr @ 300 or 725 psig year round.
   - Option C: Increase Total Load by 1,880 MMBtu/hr @ 300 or 725 psig year round.
   - PG&E fixed cost $20,000

II. PG&E Deliverables Required by March 16, 2001:

- A description of alternative transmission service main designs which meet the performance requirements specified by Applicant in its Preliminary Application for service;

- A +/- 50% order of magnitude cost and schedule to build PG&E's recommended Standard Facilities and Special Facilities Designs (including compression – if required);

- An initial assessment of all right-of-way and other permitting and land issues involved with the recommended pipeline route;

- A map showing PG&E's preferred transmission service main and the alternatives considered;

- The expected minimum delivery pressure available at the meter set for PG&E's preferred route.

Calpine Gilroy Cogeneration Facility in Gilroy:

- Option A: Increase Total Load by 470 MMBtu/hr @ 300 psig year round.
- Option B: Increase Total Load by 2820 MMBtu/hr @ 300 or 725 psig year round.
- PG&E fixed cost $20,000

Gas System Operations - Transmission System Planning

Cogeneration / Power Plant Interconnection Information Sheet

Application Date: February 23, 2001 Natural Gas Service Start Date: Dec. 1, 2001

Applicant Name: Calpine Corporation, Inc.

Project Name: Calpine Gilroy Cogen - Peaking Plant (Option A)

Project Location: Santa Clara County, Gilroy, 1400 Pacheco Pass Hwy, Gate 1

(County, City, Street Number – Attach Project Vicinity Map)

A. Existing host thermal load gas service data:

1. Customer Name: Calpine Gilroy Cogen, L.P.

2. Customer Meter Number(s):

Primary	Meter No.	39280616
	AIS ID	D517
Sub/Aux	Meter No.	3975883X
	AIS ID	D525
Transmission ID No.		5161722

3. **Winter Season Load (Nov 1 - Mar 31)**

	(HHV basis) Curtailable		(HHV basis) Non-curtailable
Total Peak Demand (MMbtu/h):	---		1315
Total Average Demand (MMbtu/h):	—		1085 (estimate)
Days / Hours of Operation:	151	/	3624

4. **Summer Season Load (April 1 - Oct 31)**

	Curtailable		Non-curtailable
Total Peak Demand (MMbtu/h):	---		1290 (estimate)
Total Average Demand (MMbtu/h):	---		1060 (estimate)
Days / Hours of Operation:	214	/	5136

5. Name plate rating of all existing gas fired equipment:

Device / Function	(HHV basis) Rating (MMbtu/h)
Two Auxiliary Boilers (fuel rating is combined total)/supplemental steam	230
Combustion Turbine Generator (Frame 7EA) / power generation	1085 @ 35°F

6. What equipment will remain after the cogen plant is operational and how will it be used?
The Calpine Gilroy Cogen Frame 7EA will remain fully operational and the thermal host arrangement will not change. The new peaking plant described herein will be a simple cycle gas turbine and will operate independently from the existing cogen plant.

7. What existing equipment will operate coincident with the cogen plant gas turbine ?
See answer to 6 above.

8. What existing equipment will operate coincident with the cogen plant auxiliary boilers?
No auxiliary boilers will be added to the site.

B.	***Proposed gas service data for cogeneration / power plant:***

1\. Service Requirements for all proposed gas fired equipment:

Device / Function	Service Pressure (psig)	(HHV basis) Rating (MMbtu/h)
Combustion Turbine Generator (GE LM-6000)	Normal = 675	470
Service Pressure given for turbine control valve inlet.	Min. Starting = 200	

2\. When will the auxiliary boiler(s) and/or duct burner(s) operate and at what load?

The proposed project will not include auxiliary boilers or duct burners.

3\. **Winter Season Load Profile (Nov 1 - Mar 31)**
(attach hourly gas load / electric generation profiles)

	(HHV basis) MMbtu/h	Time (hours)
Total Plant Peak Demand:	470 new (1785 total)	3624
Total Plant Off-Peak Demand (MMbtu/h):	---	—
Days per week / Hours per day of operation:	7	24

4\. **Summer Season Load Profile (April 1 - Oct 31)**
(attach hourly gas load / electric generation profiles)

	(HHV basis) MMbtu/h	Time (hours)
Total Plant Peak Demand:	460 new (1750 total)	4806
Total Plant Off-Peak Demand (MMbtu/h):	---	---
Days per week / Hours per day of operation:	7	24

5\. Other service requirements PG&E should be aware of, such as absolute minimum pressure requirements, right-of-way issues, CEC requirements and schedule, project schedule, etc....

A. No hourly gas load/electric generation profiles are attached. Since this plant will be run as peaker, there is no fixed schedule of operation. It will be available 24 hrs a day, 7 days a week throughout the year (with exceptions for scheduled maintenance). It is anticipated that it will operate between 5000 and 8000 hrs/yr.

B. The proposed gas service should first be evaluated to determine if the existing interconnection is capable of meeting the increase in capacity.

C. The existing Frame 7EA requires a minimum gas supply pressure of 260 psig. Under the circumstances that delivery pressure at the Calpine interface is below 300 psig PG&E should report the following items:

1. State the normal pressure and absolute minimum pressure expected; this data will be considered when sizing a booster compressor for the new LM6000 and in evaluating the impact on the existing Frame 7EA.
2. As alternative supply conditions to item 1 above, PG&E should supply costing and other pertinent information that will meet a 300 psig delivery pressure and 260 psig absolute minimum pressure at the Calpine interface.

Darin Stuhlmuller
(Type Name)

(Signature)

Regional Engineer — February 23, 2001
(Title) — (Date)

Gas System Operations - Transmission System Planning

Cogeneration / Power Plant Interconnection Information Sheet

Application Date: February 23, 2001 Natural Gas Service Start Date: March 1, 2002

Applicant Name: Calpine Corporation, Inc.

Project Name: Calpine Gilroy Cogen - Peaking Plant (Option B)

Project Location: Santa Clara County, Gilroy, 1400 Pacheco Pass Hwy, Gate 1

(County, City, Street Number – Attach Project Vicinity Map)

A.	***Existing host thermal load gas service data:***

1. Customer Name: Calpine Gilroy Cogen, L.P.

2. Customer Meter Number(s):

Primary	Meter No.	39280616
	AIS ID	D517
Sub/Aux	Meter No.	3975883X
	AIS ID	D525
Transmission ID No.		5161722

3. **Winter Season Load (Nov 1 - Mar 31)**

	(HHV basis) Curtailable		(HHV basis) Non-curtailable
Total Peak Demand (MMbtu/h):	—		1315
Total Average Demand (MMbtu/h):	---		1085 (estimate)
Days / Hours of Operation:	151	/	3624

4. **Summer Season Load (April 1 - Oct 31)**

	Curtailable		Non-curtailable
Total Peak Demand (MMbtu/h):	—		1290 (estimate)
Total Average Demand (MMbtu/h):	---		1060 (estimate)
Days / Hours of Operation:	214	/	5136

5. Name plate rating of all existing gas fired equipment:

Device / Function	(HHV basis) Rating (MMbtu/h)
Two Auxiliary Boilers (fuel rating is combined total)/supplemental steam	230
Combustion Turbine Generator (Frame 7EA) / power generation	1085 @ 35°F

6. What equipment will remain after the cogen plant is operational and how will it be used?
The Calpine Gilroy Cogen Frame 7EA will remain fully operational and the thermal host arrangement will not change. The new peaking plant described herein will have simple cycle gas turbines and will operate independently from the existing cogen plant.

7. What existing equipment will operate coincident with the cogen plant gas turbine ?
See answer to 6 above.

8. What existing equipment will operate coincident with the cogen plant auxiliary boilers?
No auxiliary boilers will be added to the site.

B.	*Proposed gas service data for cogeneration / power plant:*

1. Service Requirements for all proposed gas fired equipment:

Device / Function	Service Pressure (psig)	(HHV basis) Rating (MMbtu/h)
Six (6) Combustion Turbine Generator (GE LM-6000)	Normal = 675	2820
Service Pressure given for turbine control valve inlet.	Min. Starting = 200	

2. When will the auxiliary boiler(s) and/or duct burner(s) operate and at what load?

The proposed project will not include any new auxiliary boilers or duct burners.

3. **Winter Season Load Profile (Nov 1 - Mar 31)**
(attach hourly gas load / electric generation profiles)

	(HHV basis) MMbtu/h	Time (hours)
Total Plant Peak Demand:	2820 new (4155 total)	3624
Total Plant Off-Peak Demand (MMbtu/h):	---	---
Days per week / Hours per day of operation:	7	24

4. **Summer Season Load Profile (April 1 - Oct 31)**
(attach hourly gas load / electric generation profiles)

	(HHV basis) MMbtu/h	Time (hours)
Total Plant Peak Demand:	2740 new (4030 total)	4806
Total Plant Off-Peak Demand (MMbtu/h):	---	---
Days per week / Hours per day of operation:	7	24

5. Other service requirements PG&E should be aware of, such as absolute minimum pressure requirements, right-of-way issues, CEC requirements and schedule, project schedule, etc....

A. No hourly gas load/electric generation profiles are attached. Since this plant will be run as peaker, there is no fixed schedule of operation. It will be available 24 hrs a day, 7 days a week throughout the year (with exceptions for scheduled maintenance). It is anticipated that it will operate between 5000 and 8000 hrs/yr.

B. The proposed gas service should first be evaluated to determine if the existing interconnection is capable of meeting the increase in capacity.

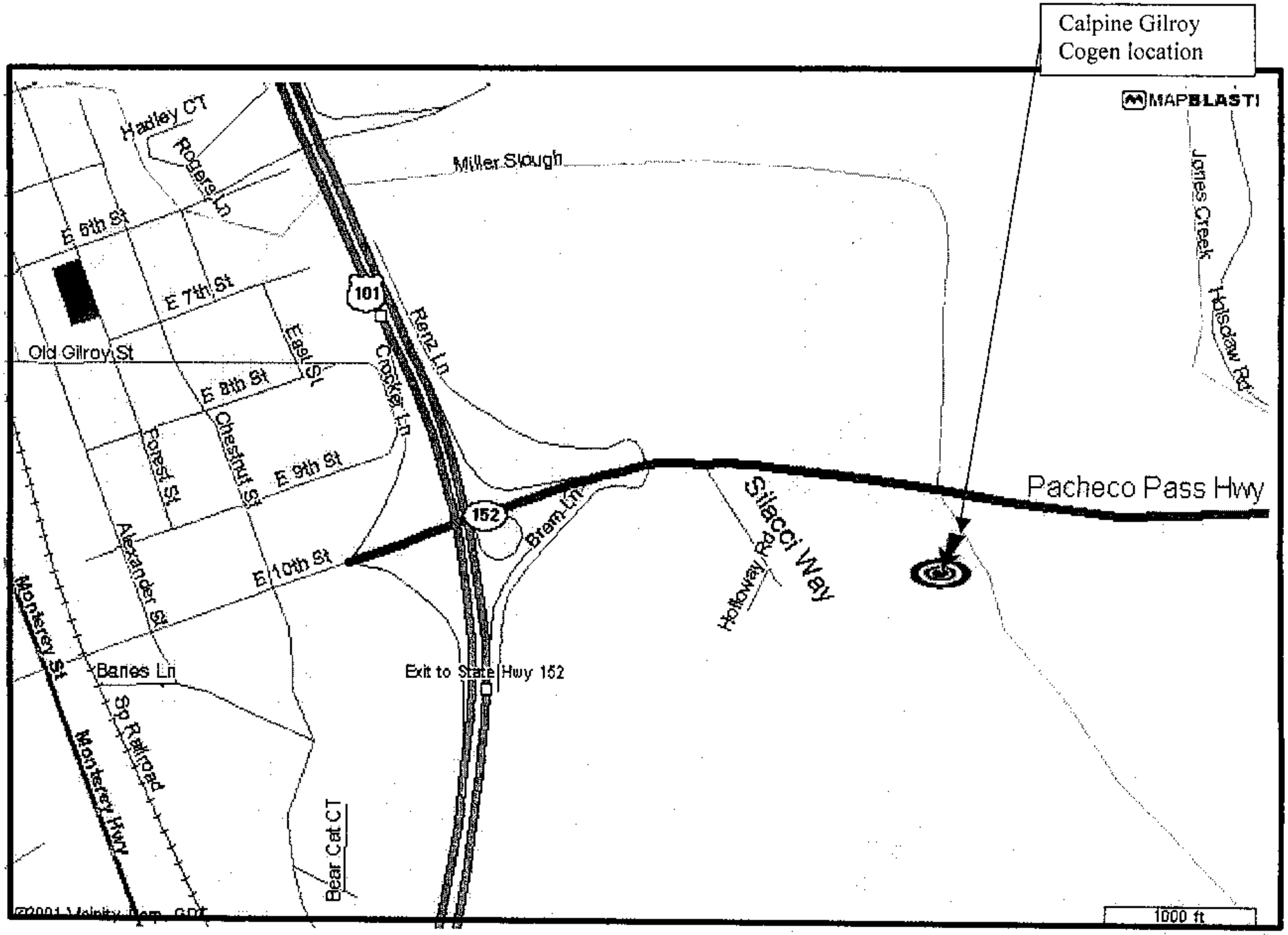
C. The existing Frame 7EA requires a minimum gas supply pressure of 260 psig. Under the circumstances that delivery pressure at the Calpine interface is below 300 psig PG&E should report the following items:

1. State the normal pressure and absolute minimum pressure expected: this data will be considered when sizing a booster compressor for the new LM6000 and in evaluating the impact on the existing Frame 7EA.
2. As alternative supply conditions to item 1 above, PG&E should supply costing and other pertinent information that will meet a 300 psig delivery pressure and 260 psig absolute minimum pressure at the Calpine interface.
3. As another alternative, PG&E should evaluate the feasibility and cost of upgrading the supply system to provide gas for the LM6000s at 725 psig. This will be compared by Calpine to the cost of installing booster compressor on site.

Darin Stuhlmuller
(Type Name)

(Signature)

Regional Engineer	February 23, 2001
(Title)	(Date)



Calpine Gilroy Cogeneration in Gilroy

revised: 2/25/2001 4:01 AM

C

Appendix C: Wastewater and Water Supply Documents

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Santa Clara Valley Water District
Water Revenue Division
5750 Almaden Expressway
San Jose, CA 95118
(408) 265-2600 or (408) 847 8484

WATER PRODUCTION STATEMENT

RECEIVED
APR 17 2001
GILROY COGEN

DO NOT WRITE IN THIS SPACE
TIME STAMP

CALPINE GILROY COGEN
P O BOX 1764
GILROY CA 95021

STATEMENT PERIOD	
04/01/01-04/30/01	
STATEMENT NO.	DUE DATE
GM004010	05/31/01

LINE NO.	WELL IDENTIFICATION NUMBER	DISTRICT WELL NUMBER	METER NUMBER	WATER METER READING END	WATER METER READING BEGIN	UOM	MULTIPLIER	METERED WATER PRODUCTION (ACRE-FEET)
0001	1	11S04E04P009	981856			AF	1	
0002	2	11S04E04P010	981859			AF	1	
0003		11S04E09C001						

STATEMENT TOTAL

1. Total Metered _______AF
2. Total Unmetered _______AF
3. TOTAL Production _______AF
4. Non-Agricultural _______AF x $115.00 = __________
5. Agricultural _______AF x $11.50 = __________

6. Total Water Cost __________
*7. Penalty 10% of Line 6 __________
*8. Interest 1% of Line 6 __________
9. TOTAL AMOUNT DUE __________

* IF FILED AND/OR PAID AFTER DUE DATE, COMPLETE LINES 7 AND 8

PLEASE ATTACH A SEPARATE WORKSHEET SHOWING CALCULATIONS FOR UNMETERED WATER.

I declare under penalties of perjury that the statements made and figures shown on this water production statement and on any accompanying worksheets or statements to this water production statement have been examined by me and to the best of my knowledge and belief are true and correct.

SIGNATURE AND TITLE
X

DATE

PC-1211 (2/98)

DISTRICT COPY - RETURN WITH YOUR PAYMENT

SEE INSTRUCTIONS ON REVERSE

Chappell
PUMP & SUPPLY
INC
WELL DRILLING

7840 Monterey Street Gilroy, California 95020 (408) 842-3113

GILROY FOODS
Gilroy Energy Company
1350 Pacheco Pass
P.O. Box 335
Gilroy, CA 95021-0335

CO-GENERATION WELL #1
B

Chappell Pump & Supply, Inc.
7840 Monterey Street
Gilroy, CA 95020

B pump depth 121' below grade
A pump depth 128' below grade

Chappell
PUMP & SUPPLY INC
WELL DRILLING
7840 Monterey Street Gilroy, California 95020 (408) 842-3113

TABLE OF CONTENTS

Chappell
PUMP & SUPPLY INC
WELL DRILLING

7840 Monterey Street Gilroy, California 95020 (408) 842-3113

3

CO-GENERATION WELL #1 - GENERAL INFORMATION

1.	Well Depth	390'
2.	Bore Hole Diameter	24"
3.	Well Diameter	14" O.D.
4.	Casing Thickness	1/4 Wall
5.	Sanitary Seal Depth	200'
6.	Perforated Interval	220' - 250' 260' - 290' 310' - 370'
	a. Perforation Type	Full-Flo Louvers
	b. Perforation Size	.070
7.	Static Water Level	41'
8.	Test Hole Depth	510'
9.	Santa Clara Valley Water District Permit No	86W0980
10.	Date Started	6/18/86
11.	Date Completed	7/7/86

Pump installed 121' below grade - M081A-42

(1)

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 156279

State Well No.
Other Well No.

...of Intent No.
...Permit No. or Date 8680980

(1) OWNER: Name Gilroy Foods
Address P.O. Box 1088
City Gilroy, ca Zip 95020

(2) LOCATION OF WELL (See instructions):
County Santa Clara Owner's Well Number Co-Gen #1 3
Well address if different from above ~~See Below~~
Township 11S Range 4E Section 4
Distance from cities, roads, railroads, fences, etc.

WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well X Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☒
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size 3/8 pea
Diameter of bore 24"
Packed from 200 to 390 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

(8) PERFORATIONS:
Type of perforation or size of screen Full-flo Louvers

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
+2	390	14	1/4	220	250	.070
				260	290	.070
				310	370	.070

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 200 ft.
Were strata sealed against pollution? Yes ☒ No ☐ Interval ft.
Method of sealing Pumped Grout

(10) WATER LEVELS:
Depth of first water, if known 48' ft.
Standing level after well completion 33' ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? CPSI
Type of test Pump ☒ Bailer ☐ Air lift ☐
Depth to water at start of test 41 ft P.L. At end of test 57 ft
Discharge 1000 gal/min after 8 hours Water temperature
Chemical analysis made? Yes ☒ No ☐ If yes, by whom? Mission Lab
Was electric log made? Yes ☒ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth 510 ft. Depth of completed well 390 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	5	Top Soil
5	25	Blue Clay
25	42	Sand W/Stks Gravel
42	48	Yellow Clay
48	68	Sand and Gravel
68	100	Blue Clay
100	109	Sandy Blue Clay
109	115	Sand
115	124	Sand and Gravel
124	158	Blue Clay
158	159	Gravel
159	168	Yellow Clay
168	178	Yellow Clay and Gravel
178	185	Yellow Clay
185	190	Yellow Clay and Gravel
190	205	Sand and Gravel W/Stks Yellow Clay
205	211	Yellow Clay
211	224	Blue Clay
224	240	Gravel W/Blue Clay
240	262	Gravel W/Yellow Clay
262	290	Sand and Gravel W/Blue and Yellow Clay
290	300	Yellow Clay W/Gravel
300	305	Boulders
305	330	Sand and Gravel W/Yellow Clay
330	373	Sand and Gravel
373	384	Yellow Clay
384	460	Sand and Gravel W/Stks Yellow Clay
460	490	Blue Clay
490	510	Sand and Gravel

Work started 6/18 19 86 Completed 7/7 19 86

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED (Well Driller)
NAME Chappell Pump & Supply, Inc.
(Person, firm, or corporation) (Typed or printed)
Address 7840 Monterey Street
City Gilroy, CA Zip 95020
License No. 311940 Date of this report 9/25/86

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

(3)

Chappell
PUMP & SUPPLY INC
WELL DRILLING

7840 Monterey Street Gilroy, California 95020 (408) 842-3113

September 10, 1986

Gilroy Foods
1350 Pacheco Pass
Gilroy, CA 95020

β

CO-GENERATION WELL #1

8 Hour Continuous Pump Test Results

Test Date: July 18, 1986
Pumping Rate: 1,000 gallons/minute

TIME	PUMPING LEVEL (ft.)
8:40 a.m.	41' (static)
8:55	55'4"
9:00	58'1"
9:07	54'3"
9:20	55'
9:35	55'
9:50	55'4"
10'05"	55'6½"
10:20	55'8"
10:35	56'
10:50	56'2"
11:05	56'4"
11:20	56'5"
11:35	56'7"
11:50	56'7"
12:05	56'9"
12:20	56'9½"
12:35	56'11"
12:50	56'10½"
1:05 p.m.	56'11"
1:20	57'½"
1:35	57'
1:50	57'5"
2:05	57'5"

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, California 95118
Telephone (408) 265-2600

WELL #1
B

WATER WELL CONSTRUCTION APPLICATION

FC 158 (04-09-84)

TO BE COMPLETED BY DISTRICT

Well Permit No.: 86W0980	Date Issued: 7-7-86	Well Registration No.:
Water Quality Zone: 1 / Expiration Date: 10-7-86	Coordinates of Well "X" ____ "Y" ____	Driller's Log No.: 188027

TO BE COMPLETED BY OWNER AND DRILLER

Property Owner: Gilroy Foods	Well Owner (if different)	Drilling Co.: CHAPPELL Pump & Supply Inc
Address: 1350 Pacheco Pass	Address:	Driller's Contractors License Number: 311940
City, State, Zip: Gilroy, CA 95020	City, State, Zip	Address: 7840 Monterey St
Telephone No.: 847-1414	Telephone No.:	City, State, Zip: Gilroy, CA 95020
Assessor's Parcel No. of Well Site: Book 841 Page 17 Parcel 054	Owner's/Consultant's Well No.: #1	Telephone No.: 842-3113

Estimated depth of completed well: ☐ Less than 50 ft. ☐ 50 to 300 ft. ☒ Over 300 ft.

Water Quality Zone No.: 1 (See Fig. 1 SCVWD Construction Standards. Use "BR" if bedrock).

Purpose of Well: ☐ Domestic ☒ Municipal/Industrial ☐ Agricultural *☐ Monitoring ☐ Cathodic Protection

*Monitoring wells are those constructed for the purpose of obtaining repetitive water level measurements and/or repetitive water samples for analyses. This includes wells constructed for general exploration and investigation purposes as well as those to be constructed in conformance with the Hazardous Materials Storage Permit Ordinance for site-specific groundwater monitoring of existing underground hazardous materials storage tanks.

THIS SECTION TO BE COMPLETED IF THIS APPLICATION IS FOR A MONITORING WELL

Purpose of Monitoring Well: ☐ To comply with City or County Hazardous Materials Storage Permit Ordinance ☐ Exploration studies

☐ Other (specify): ____

Name of Business: ____ Business License No.: ____

If proposed well is to meet compliance with a Hazardous Materials Storage Permit Ordinance has the City or County been contacted? ☐ Yes ☐ No

If yes, give name of City or County ____

Consultant's Name (company) ____

Address ____

City, State, Zip ____

Telephone No. ( ) ____

Type of monitoring device: ☐ Groundwater ☐ Vadose

Monitoring well use: ☐ Depth ☐ Quality ☐ Depth and Quality ☐ Chloride ☐ Depth and Chloride

Vadose device installation: ☐ Vapor ☐ Interface ☐ Suction Lysimeter

Responsible professional (name) ____

Registration No. Civil Engineer OR Certificate No. Engineering Geologist

TOPOGRAPHIC FEATURES

Is well to be constructed: ☐ In a public sidewalk ☐ In a public road ☐ On public property ☒ On private property

Within 50 ft. of the top of a creek bank ☐ Yes ☒ No — Within 50 ft. of any existing well ☐ Yes ☒ No

Within 50 ft. of a sanitary sewer ☐ Yes ☒ No — Within 150 ft. of a cesspool or seepage pit ☐ Yes ☒ No

Within 100 ft. of a pit privy, septic tank, leachfield ☐ Yes ☒ No — Plot well location on reverse side of this application

CERTIFICATION BY WELL OWNER/AGENT AND DRILLER/AGENT:

I certify that the information given above is correct to the best of my knowledge. I certify that the well will be constructed in compliance with the conditions of this permit, the Santa Clara Valley Water District's Ordinance 75-6 and, if applicable, the Hazardous Materials Storage Permit Ordinance of the County or City, as appropriate. It is my responsibility as the well owner to notify this District of any changes in the purpose of this well from that which is indicated on this application form.

[signature] 7/3/86
Signature of Well Owner/Agent — Date

[signature] 7/3/86
Signature of Driller/Agent — Date

IMPORTANT: A minimum 24-hour notice must be given to SCVWD Inspection Dept. prior to installing the annular seal. Call (408) 265-2600, Ext. 380. For weekends, holidays, after hours call (408) 395-8121 or (408) 265-2605.

Gilroy Foods ß
Co-Generation Well #1
Page 2

TIME	PUMPING LEVEL (ft.)
2:20 p.m.	57'4"
2:35	57'3½"
2:50	57'1½"
3:05	57'1½"
3:20	57'1½"
3:35	57'1½"
3:50	57'1½"
4:05	57'1½"
4:20	57'1½"
4:35	57'1½"
4:50	57'1"
5:05	Shut down

If you have any questions, please feel free to call.

Respectfully,

Robt K Chappell

Robert K. Chappell
Chappell Pump & Supply, Inc.

RKC/jc

(5)

Chappell
PUMP & SUPPLY
INC
WELL DRILLING

7840 Monterey Street Gilroy, California 95020 (408) 842-3113

September 10, 1986

Gilroy Foods
1350 Pacheco Pass
Gilroy, CA 95020

CO-GENERATION WELL #1 B

Step vs. Drawdown Test

Test Date: August 25, 1986

Time	Water Level (ft.)	Gallons/Minute
2:44	39'9" (static)	
3:32	47'0"	600
3:52	50'6"	850
4:10	53'6"	1020
4:30	56'9"	1180
4:56	60'0"	1320
5:05	Shut down	

If you have any questions, please feel free to call.

Respectfully,

Robert K. Chappell
Chappell Pump & Supply, Inc.

RKC/jc

Chappell PUMP & SUPPLY INC WELL DRILLING

7840 Monterey Street Gilroy, California 95020 (408) 842-3113

September 10, 1986

Gilroy Foods
1350 Pacheco Pass
Gilroy, CA 95020

B

CO-GENERATION WELL #1

Step vs. Drawdown Test

Test Date: August 25, 1986

Time	Water Level (ft.)	Gallons/Minute
2:44	39'9" (static)	
3:32	47'0"	600
3:52	50'6"	850
4:10	53'6"	1020
4:30	56'9"	1180
4:56	60'0"	1320
5:05	Shut down	

If you have any questions, please feel free to call.

Respectfully,

Robert K. Chappell
Robert K. Chappell
Chappell Pump & Supply, Inc.

RKC/jc

MISSION LABORATORY

490 Mission Vineyard Rd.
SAN JUAN BAUTISTA, CA 95045

(408) 623-4293

DOMESTIC WATER ANALYSIS

Chappell Pump and Supply Inc.
7840 Monterey Street
Gilroy, CA 95020

Laboratory Log No.: 8359
Sample received: 7/16/86
Report date: 8/4/86

All units in mg/L unless otherwise noted.

Sample I.D.:	Co-Generation Well #1 B	MCL* (mg/L)
GENERAL MINERAL		
Total Alkalinity (as $CaCO_3$):	190	
Bicarbonate:	190	
Carbonate:	0	
Hydroxide:	0	
Calcium (Ca):	27	
Chloride (Cl):	19	500
Conductivity (umhos/cm at 25°C):	510	1600
Copper (Cu):	0.0	1.0
Hardness (Ca + Mg as $CaCO_3$):	130	
Iron (Fe):	0.03	0.3
M.B.A.S. (Foaming Agents):	0.0	0.5
Magnesium (Mg):	20	
Manganese (Mn):	0.03	0.05
pH (Units):	7.8	
Silica (SiO_2):	28	
Sodium (Na):	30	
Sulfate (SO_4):	31	500
Residue, Filtrable (TDS at 104°C):	420	1000
Zinc (Zn):	0.0	5.0
INORGANIC CHEMICAL		
Arsenic (As):	<0.01	0.05
Barium (Ba):	0.1	1.0
Cadmium (Cd):	0.00	0.010
Chromium (Cr):	0.00	0.05
Fluoride (F):	0.2	1.4-2.4
Lead (Pb):	0.03	0.05
Mercury (Hg):	<0.001	0.002
Nitrate (NO_3):	36	45
Selenium (Se):	<0.01	0.01
Silver (Ag):	0.00	0.05
GENERAL PHYSICAL		
Color (APHA Units):	10	15
Odor (T.O.N):	1	3
Turbidity (N.T.U.):	7.6	5

*Maximum Contaminant Level

CHEMIST: Glen R. Crabtree

Glen R. Crabtree

(7a)

MISSION LABORATORY

490 Mission Vineyard Rd.
SAN JUAN BAUTISTA, CA 95045

(408) 623-4293

DOMESTIC WATER ANALYSIS

Chappell Pump and Supply Inc.
7840 Monterey Street
Gilroy, CA 95020

Laboratory Log No.: 8559
Sample received: 8/25/86
Report date: 9/4/86

All units in mg/L unless otherwise noted.

Sample I.D.:	Co-Generation Well #1 A	B	MCL* (mg/L)
GENERAL MINERAL			
Silica (SiO_2):	26.4	27.6	

*Maximum Contaminant Level

CHEMIST: Glen R. Crabtree

Glen R. Crabtree

(7b)

BACTERIOLOGISTS
Approved by State of California
408 724-5422
408 724-4437

SOIL CONTROL LAB

Gilroy Foods #1

1234 HIGHWAY 1
WATSONVILLE

In any reference, please quote Certified Analysis Number appearing hereon.

67181-1-178

A Division of Control Laboratories Inc.

Chappell Pump
7840 Monterey Street
Gilroy CA 95020

28 JUL 86

CERTIFIED ANALYTICAL REPORT

MATERIAL:	Water sample received 16 July 1986	PUBLIC
IDENTIFICATION:	Gilroy Foods #1 - Co-generation Plant	HEALTH
REPORT:	Quantitative chemical analysis is as follows expressed as milligrams per liter (parts per million):	DRINKING WATER LIMITS[1]

pH value (units)	7.80	10.6
Conductivity (micromhos/cm)	620	900
Carbonate Alk. (as $CaCO_3$)	0	120
Bicarbonate Alk. (as $CaCO_3$)	185	-
Total Alkalinity (as $CaCO_3$)	185	-
Total Hardness (as $CaCO_3$)	175	-
Total Dissolved Solids	410	500
Nitrate (as NO_3)	27	45
Chloride (Cl)	18	250
Sulfate (SO_4)	28	250
Fluoride (F)	0.13	1.0
Calcium (Ca)	37	-
Magnesium (Mg)	20	-
Potassium (K)	2	-
Sodium (Na)	29	-
Total Iron (Fe)	< 0.05	0.3
Manganese (Mn)	0.01	0.05
Silica (Si)	30	-

[1] California Administrative Code; Title 22

The undersigned certifies that the above is a true and accurate report of the findings of this laboratory.

Analyst

(7c)

ANALYTICAL CHEMISTS
and
BACTERIOLOGISTS
Approved by State of California

408 724-5422
408 724-4427

SOIL CONTROL LAB

1234 HIGHWAY 1
WATSONVILLE
CALIFORNIA

A Division of Control Laboratories Inc

67776-2-178

Chappell Pump
7840 Monterey Street
Gilroy CA 95020

3 SEP 86

CERTIFIED ANALYTICAL REPORT

B

MATERIAL: Water sample received 26 August 1986
IDENTIFICATION: Gilroy Foods - Co. Gen. Well #1 (sample 2)
REPORT: Quantitative chemical analysis is as follows expressed as milligrams per liter (parts per million):

	Silica (as SiO_2)
Sample "A"	47
Sample "B"	46

The undersigned certifies that the above is a true and accurate report of the findings of this Laboratory.

Analyst

(7d)

Santa Clara Valley Water District

WELL INSPECTION COMPLETION NOTICE

FC 158A (02-05-86) (OP 4-801)

FROM: Groundwater Protection Section DATE: 7-7-86

Well Permit No. 86W 350 Well/Boring No. #1 11S4E04P09

Inspector J. Rueter Date of Inspection 7-3-86

Well Owner Gilroy Foods

Address of Well Site 1350 Pacheco Pass City or County Gilroy

Drilling Co. Chappell Pump Consultant —

Purpose of Well:
- ☐ Domestic
- ☐ Agricultural
- ☑ Municipal/Industrial
- ☐ Cathodic Protection

*Monitoring Well Use
- *☐ Vadose
- *☐ Groundwater
- *☐ Other

1. Well completed according to provisions of Santa Clara Valley Water District Permit ☑ Yes ☐ No (If "No", see comments below)
2. Depth of Surface Annular Seal = 20'

Comments: [illegible]
[illegible]

Distribution: White = Groundwater Protection Sect. Pink = Cities or County (w/attach) Canary = Permittee Goldenrod = Water Revenue

** COMMUNICATIONS REPORT **   AS OF   APR 24 2001 15:07   PAGE.01

FOSTER WHEELER SAC

TOTAL PAGES

SEND   : 0066
RECEIVE : 0132

TOTAL TIME

SEND   : 00°19'48"
RECEIVE : 00°55'14"

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	JOB#	STATUS
01	04/23	09:39	916 965 6272	G3--S	00'26"	001	089	OK
02	04/23	10:32	916 927 8774	G3--R	00'35"	001	091	OK
03	04/23	10:35	FOSTER WHEELER ENV-CM	UF--R	01'56"	010	092	OK
04	04/23	10:45	916 965 6272	G3--S	00'25"	001	093	OK
05	04/23	11:36	6 557 5264 00	EC--S	01'07"	004	095	OK
06	04/23	11:43	16027653244	EC--S	01'14"	005	098	OK
07	04/23	11:51	19494564560	----S	00'00"	000	096	INC
08	04/23	12:01	FOSTER WHEELER ENV-CM	UF--R	01'12"	002	102	OK
09	04/23	12:03	FOSTER WHEELER ENV-CM	UF--S	04'39"	015	101	OK
10	04/23	12:10	FOSTER WHEELER ENV-CM	UF--S	02'54"	012	104	OK
11	04/23	12:30	925+600+8924	EC--R	02'11"	009	106	OK
12	04/23	12:36	916 447 0348	EC--R	05'10"	009	107	OK
13	04/23	13:06		EC--R	00'57"	003	108	OK
14	04/23	13:08	FOSTER WHEELER	UF--R	00'54"	004	109	OK
15	04/23	13:28		EC--R	00'48"	002	110	OK
16	04/23	13:30	FOSTER WHEELER ENV	UF--R	00'48"	003	111	OK
17	04/23	15:42		G3--R	00'30"	000		INC
18	04/23	17:02	9166575390	EC--S	01'14"	004	112	OK
19	04/23	18:04	FOSTER WHEELER BOSTON	UF--R	00'21"	001	114	OK
20	04/23	18:21	FOSTER WHEELER ENV.	UF--S	04'51"	014	115	OK
21	04/24	08:06		G3--R	01'12"	002	117	INC
22	04/24	08:30		G3--R	00'29"	000		INC
23	04/24	08:44	916 632 1695	EC--R	00'44"	002	118	OK
24	04/24	08:56		EC--R	07'42"	016	119	OK
25	04/24	09:04	916 632 1695	EC--S	00'35"	002	121	OK
26	04/24	10:14	2083428832	EC--R	06'20"	013	123	OK
27	04/24	10:26	2083428832	EC--R	07'12"	016	124	OK
28	04/24	10:44	FOSTER WHEELER	UF--R	01'01"	004	125	OK
29	04/24	12:58	FOSTER WHEELER/ENVIRO	UF--S	02'23"	008	126	OK
30	04/24	14:29	283 1821	EC--R	07'52"	003	128	OK
31	04/24	14:37	FOSTER WHEELER ENV-CM	UF--R	03'20"	016	129	OK
32	04/24	15:03	408 847 1088	EC--R	04'00"	016	130	OK

D

Appendix D: Air Quality Permit Application

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ATTACHMENT B
California Energy Commission
Air Quality Self-Certification Checklist for Simple-Cycle Gas Turbine Generation Units

License Application for:

[ ] New Emissions Unit(s) at a New Stationary Source

[x] New Emissions Unit(s) at an Existing Stationary Source

DISTRICT:	DATE:
Bay Area Air Quality Management District	April 23, 2001

FACILITY INFORMATION

License to be Issued to: Calpine Gilroy Cogen, L.P.		
Mailing Address: P.O. Box 1764		
City: Gilroy	State: CA	Zip Code: 95021
Address Where Equipment Will be Operated: 1400 Pacheco Pass Hwy		
City: Gilroy	State: CA	Zip Code: 95020
Nature of Business: Electric power generation and steam production	SIC Code: 4931	
Facility Contact Person: Brian Martin Plant Engineer	Phone Number: (408) 847-5328 Fax Number: (408) 847-5328 Email: BrianM@calpine.com	
Application Information Contact Person (if different from above): Barbara McBride Calpine Corporation	Phone Number: (925) 600-2330 Fax Number: (925) 485-3746 Email: bmcbride@calpine.com	

Will the facility be under contract to sell its power within California? [X] Yes [ ] No

If Yes, state the entity contracted with and the percentage of power that will be sold:

California Department of Water Resources 23% - 100%

What is the maximum total electrical output of the new power generation equipment at International Standards Organization (ISO) conditions? 148.8 MW

Estimated construction start date: 5/15/01 Estimated completion date: 10/5/01

Length of commissioning period (from date of initial startup): 6 wks per unit

NEW EQUIPMENT INFORMATION

TURBINE #1	If multiple identical units, indicate number of units of this type: 3		
		49.6 MW	MW
	Manufacturer: General Electric		
	Model: LM6000PC		
	Maximum Heat Input (based on HHV of fuel): 467.6 MMBtu/hr		
TURBINE #2	If multiple identical units, indicate number of units of this type:		
		MW	MW
	Manufacturer:		
	Model:		
	Maximum Heat Input (based on HHV of fuel): MMBtu/hr		

Suggested Best Available Control Technology (BACT)		**Emission Level**	**Control Technology**
	NOx	5 ppmvd @ 15% O_2 (1-hr rolling average)	Selective catalytic reduction or other equivalent control device
	CO	6 ppmvd @ 15% O_2 (1-hr rolling average)	Oxidation catalyst or equivalent control device
	VOC	2 ppmvd @ 15% O_2 (1-hr rolling average)	Good combustion practices
	PM10	Emission limit corresponding to natural gas firing (PUC quality natural gas)	Natural gas firing (PUC quality natural gas)
	SO2	Emission limit corresponding to natural gas firing (PUC quality natural gas)	Natural gas firing (PUC quality natural gas)
	If applicable, NH3	10 ppmvd @ 15% O_2 (1-hr rolling average)	

Selective Catalytic Reduction Information, if applicable	**If not indicated, please specify units of measurement:**			
	Ammonia Storage Tank(s):	Tank type: to be determined (TBD)		
		Number of tanks: TBD		
		Tank size: TBD		
		Reactant type: [ ] Anhydrous ammonia [ ] Aqueous ammonia [ ] Urea If aqueous ammonia, indicate ammonia concentration: ______		
		Turnover rate: TBD		
	SCR Manufacturer:	TBD		
	SCR Make:	TBD		
	SCR Model:	TBD		
	Catalyst dimensions:	Length: TBD ft	Width: TBD ft	Height: TBD ft
	Pressure drop across SCR unit: TBD			
	Pressure drop across ammonia injection grid: TBD			
	Space velocity (gas flow rate/catalyst volume): TBD			
	Area velocity (gas flow rate/wetted catalyst surface area): TBD			

NEW EQUIPMENT INFORMATION (continued)

Selective Catalytic Reduction Information, if applicable (continued)	**Manufacturer's guarantee:**	Control efficiency: TBD %	Catalyst life: TBD yrs	
	Ammonia injection rate: TBD			
	NOx concentration into SCR unit: TBD ppmvd @ 15% O2			
	SO_2 oxidation rate: TBD		SO_3 emissions: TBD	
	Operating temperature range of catalyst: TBD °F			
	Temperature at which ammonia injection will begin: TBD °F			

Oxidation Catalyst Information, if applicable	**If not indicated, please specify units of measurement:**			
	Manufacturer:	TBD		
	Make:	TBD		
	Model:	TBD		
	Catalyst dimensions:	Length: TBD ft	Width: TBD ft	Height: TBD ft
	Pressure drop across catalyst: TBD			
	Manufacturer's guarantee:	CO control efficiency: TBD %	Catalyst life: TBD yrs	
		VOC control efficiency: TBD %		
	Space velocity (gas flow rate/catalyst volume): TBD			
	Area velocity (gas flow rate/wetted catalyst surface area): TBD			
	Catalyst cell density (cells per square inch): TBD			
	CO concentration into catalyst: TBD ppmvd @ 15% O2			
	VOC concentration into catalyst: TBD ppmvd @ 15% O2			
	Operating temperature range of catalyst: TBD °F			

Fuel Data	Fuel Type: Natural gas		**Specify sulfur content if other than 5 gr/100 scf**
	Higher Heating Value: 1,022 Btu/scf		Sulfur Content: 0.25 gr/100 scf
	Maximum Fuel Consumption Rate: 0.458 MMscf/hr		
	Exhaust Data:	Flow: 2175,069 dscfm / 591,693 wacfm	M/sec or m^3/sec or acfm

On-line Normalized Emission Rate	**(If corrected to other than 15% O2, indicate at right)**			$\%O_2$
	Specify by units listed below or indicate other values and units at right:			
	NOX	5 ppmvd on a 1-hr rolling avg.	0.018 lb/MMBtu	
	CO	6 ppmvd on a 1-hr rolling avg.	0.013 lb/MMBtu	
	VOC	2 ppmvd on a 1-hr rolling avg.	0.0025 lb/MMBtu	
	PM10	N/A ppmvd on a 1-hr rolling avg.	2.5 lb/hr	
	SO_2	0.14 ppmvd on a 1-hr rolling avg.	0.0007 lb/MMBtu	
	If applicable, NH_3	10 ppmvd on a 1-hr rolling avg.	0.013 lb/MMBtu	

NEW EQUIPMENT INFORMATION (continued)

On-line Mass Emission Rate (each turbine)		Hourly [lbs/hr]	Daily [lbs/day]	Quarterly [lbs/qtr]	Annual [tons/yr]
	NOX	8.40	202	N/A	16.5
	CO	6.13	147	N/A	12
	VOC	1.17	28	N/A	2
	PM10	2.5	60	N/A	5
	SO_2	0.33	8	N/A	0.6
	If applicable, NH3	6.22	149	N/A	12

Startup and Shutdown Mass Emission Rate (each turbine)		Startup Emissions Hourly [lbs/hr]	Shutdown Emissions Hourly [lbs/hr]
	NOX	35.00	Included in startup
	CO	27.00	Included in startup
	VOC	0.89	Included in startup
	PM10	2.50	Included in startup
	SO_2	0.33	Included in startup

Commissioning Period Mass Emission Rate (each turbine)		Hourly [lbs/hr]	Daily [lbs/day]
	NOx	94.1	1,130
	CO	194	2,332
	VOC	6.29	75.5
	PM10	2.50	30.0
	SO_2	0.33	3.96

Operating Parameters	Operating Hours:	[hrs/day]	[hrs/qtr]	[hrs/yr]
		24	2,208	8,760
	Startup Data:	**Number of startups per day:**	1 (includes shutdown)	
		Number of startups per year:	300 (includes shutdown)	
		Startup duration:	1 hour (includes shutdown)	
	Shutdown Data:	**Number of shutdowns per day:**	N/A	
		Number of shutdowns per year:	N/A	
		Shutdown duration:	N/A	

NEW EQUIPMENT INFORMATION (continued)

Facility Annual Emissions and Emissions to be Offset		Facility Annual Emissions [tons/yr]	Emissions That Need to be Offset				
			Q1 [lbs/qtr]	Q2 [lbs/qtr]	Q3 [lbs/qtr]	Q4 [lbs/qtr]	Annual [tons/yr]
	NOx	39.5	N/A	N/A	N/A	N/A	39.5
	CO	36.0	N/A	N/A	N/A	N/A	N/A
	VOC	6.9	N/A	N/A	N/A	N/A	6.9
	PM10	14.7	N/A	N/A	N/A	N/A	N/A
	SO_2	1.9	N/A	N/A	N/A	N/A	N/A

Offsets to be Provided (If Necessary)		Offset Ratio	Offsets Required*				Source of Offsets
			Q1 [lbs/qtr]	Q2 [lbs/qtr]	Q3 [lbs/qtr]	Q4 [lbs/qtr]	
	NOx	1.15	N/A	N/A	N/A	N/A	[ ] State bank* [ ] District bank [X] Other, specify: *applicant –owned ERCs*
	CO	N/A	N/A	N/A	N/A	N/A	[ ] State bank [ ] District bank [ ] Other, specify:
	VOC	1.15	N/A	N/A	N/A	N/A	[ ] State bank [ ] District bank [X] Other, specify: _ *applicant –owned ERCs*
	PM10	N/A	N/A	N/A	N/A	N/A	[X] State bank [ ] District bank [ ] Other, specify:
	SO_2	N/A	N/A	N/A	N/A	N/A	[ ] State bank [ ] District bank [ ] Other, specify:

Monitoring and Reporting	What is the make/model of the continuous emissions monitoring system (CEMS), if known? Make: TBD Model: TBD The following parameters will be continuously monitored: [X] NOx [X] CO [X] O_2 [X] Fuel flow rate [X] Ammonia injection rate [ ] Other, please specify: ____________________ Will the CEMS be used to measure both on-line and startup/shutdown emissions? [X] Yes [ ] No

**Note: BAAQMD regulations require offsets to be provided on an annual basis. 45.4 tpy of NOx ERCs and 7.9 tpy of POC ERCs will be provided from certificates owned by the applicant.*

ADDITIONAL INFORMATION

1. **Facility Location:** [ ] Urban (area of dense population) [X] Rural (area of sparse population)

   Will the facility be located within 1,000 feet of a school? [ ] Yes [X] No

   (Note: Per Section 42301.9 of the California Health and Safety Code, a "school" means any public or private school used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.)

2. **Nearest Receptor:**

   Distance to nearest residence 1,400 feet

   Distance to nearest business less than 100 feet

   Air Dispersion Modeling Input Data

3. **Stack Parameters:**

   Height 80 feet Inside diameter 171 inches

   Is a rain cap present on the exhaust stack? [ ] Yes [X] No

   Direction of exhaust from structure or device: [X] Vertical [ ] Horizontal

   Building Dimension Data for Downwash Calculations:

   a) Building Height 13.7 m

   b) Minimum horizontal building dimension 7.92 m

   c) Maximum horizontal building dimension 9.14 m

4. Was an ambient air quality impact analysis required for this project? [ ] Yes [X] No

   If Yes, was an ambient air quality impact analysis conducted as required by District rules?[ ] Yes [ ] No

   If Yes, please attach the analysis and provide an electronic version on disk or CD.

   See Appendix C of the BAAQMD permit application.

5. Was a health risk assessment required for this project? [X] Yes [ ] No

   If Yes, was a health risk assessment conducted as required by District rules? [X] Yes [ ] No

   If Yes, please attach the analysis and provide an electronic version on disk or CD.

   See Appendix D of the BAAQMD permit application.

6. Please attach a site map for the project. *See Figure 2 of the BAAQMD permit application*

CERTIFICATION

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are, true, accurate, and complete.

Bryan Bertacchi, Vice President, Operations
Responsible Official (Please Print Name)

______________________________ ______________

Signature of Responsible Official Date

CALPINE

WESTERN REGION OFFICE
6700 KOLL CENTER PARKWAY
SUITE 200
PLEASANTON, CALIFORNIA 94566
925.600.2000
925.600.8924 (FAX)

April 19, 2001

William deBoisblanc
Permit Services Division
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Re: Application for Authority to Construct Three Peaking Turbines
Calpine Gilroy Cogen, L.P.

Dear Mr. deBoisblanc:

Calpine Gilroy Cogen, L.P., is pleased to submit this application for an Authority to Construct and Permit to Operate three LM6000 peaking turbines at our cogeneration facility in Gilroy. The turbines will be fired only on natural gas, and will be equipped with water injection and/or dry low-NOx burners, selective catalytic reduction and oxidation catalyst emission controls. Emissions from the three new turbines will be below significance levels. Offsets for the increases in NOx and POC emissions will be provided from ERCs currently held by Calpine Corporation.

Forms P-101B, C, A and P are attached, and supplemental information regarding the proposed project is included in the enclosed application support document. A check in the amount of $107,997.00 for the filing fee, initial fee, and permit to operate fee will be submitted to the District under separate cover.

To meet our construction schedule, we need to receive the Authority to Construct by May 25. If there is anything we can do to expedite the review of this application, or if you have any questions regarding the proposed project, please do not hesitate to call Barbara McBride at 925-600-2330 or Nancy Matthews of Sierra Research at (916) 444-6666.

Sincerely,

B. Be

Bryan Bertacchi
Vice President, Operations
Calpine

enclosures

cc: Barbara McBride, Calpine
Bryan Bertacchi, Calpine
Brian Martin, Calpine Gilroy Cogen, L.P.
Susan Strachan, Calpine
Nancy Matthews, Sierra Research

DATA FORM P Emission Point

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street . . . San Francisco, CA . . . 94109. . . (415) 749-4990

Form P is for well-defined emission points such as stacks or chimneys only; do not use for windows, room vents, etc.

Business Name: Calpine Gilroy Cogen, L.P. Plant No: B1180

Emission Point No: P-3

With regard to air pollutant flow into this emission point, what sources(s) and/or abatement device(s) are **immediately** upstream?

S- 3 **S-** ____ **S-** ____ **S-** ____ **S-** ____
S- ____ **A-** 3 **A-** 4 **A-** ____ **A-** ____ **A-** ____

Exit cross-section area: 160 sq. ft. Height above grade: 80 ft.

Effluent Flow from Stack		
	Typical Operating Condition	*Maximum Operating Condition*
Actual Wet Gas Flowrate	583,852 cfm	594,824
Percent Water Vapor	10.79 Vol %	10.76 Vol %
Temperature	854 °F	849 °F

If this stack is equipped to measure (monitor) the emission of any air pollutants,

Is monitoring continuous? yes

What pollutants are monitored? NOx, CO, CO_2/O_2

Person completing this form Nancy Matthews Date April 19, 2001

DATA FORM P
Emission Point

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street . . . San Francisco, CA . . . 94109. . . (415) 749-4990

Form P is for well-defined emission points such as stacks or chimneys only; do not use for windows, room vents, etc.

Business Name: Calpine Gilroy Cogen, L.P. Plant No: B1180

Emission Point No: P-4

With regard to air pollutant flow into this emission point, what sources(s) and/or abatement device(s) are **immediately** upstream?

S- 4 S- ___ S- ___ S- ___ S- ___
S- ___ A- 5 A- 6 A- ___ A- ___ A- ___

Exit cross-section area: 160 sq. ft. Height above grade: 80 ft.

Effluent Flow from Stack		
	Typical Operating Condition	*Maximum Operating Condition*
Actual Wet Gas Flowrate	583,852 cfm	594,824
Percent Water Vapor	10.79 Vol %	10.76 Vol %
Temperature	854 °F	849 °F

If this stack is equipped to measure (monitor) the emission of any air pollutants,

Is monitoring continuous? yes

What pollutants are monitored? NOx, CO, CO_2/O_2

Person completing this form Nancy Matthews Date April 19, 2001

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DATA FORM P
Emission Point

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street . . . San Francisco, CA . . . 94109. . . (415) 749-4990

Form P is for well-defined emission points such as stacks or chimneys only; do not use for windows, room vents, etc.

Business Name: Calpine Gilroy Cogen, L.P. Plant No: B1180

Emission Point No: P-5

With regard to air pollutant flow into this emission point, what sources(s) and/or abatement device(s) are **immediately** upstream?

S- 5 **S-** ____ **S-** ____ **S-** ____ **S-** ____
S- ____ **A-** 7 **A-** 8 **A-** ____ **A-** ____ **A-** ____

Exit cross-section area: 160 sq. ft. Height above grade: 80 ft.

Effluent Flow from Stack		
	Typical Operating Condition	*Maximum Operating Condition*
Actual Wet Gas Flowrate	583,852 cfm	594,824
Percent Water Vapor	10.79 Vol %	10.76 Vol %
Temperature	854 °F	849 °F

If this stack is equipped to measure (monitor) the emission of any air pollutants,

Is monitoring continuous? yes

What pollutants are monitored? NOx, CO, CO_2/O_2

Person completing this form Nancy Matthews Date April 19, 2001

Data Form A
ABATEMENT DEVICE

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990

for office use only

Abatement Device: Equipment/process whose primary purpose is to reduce the quantity of pollutant(s) emitted to the atmosphere.

1. Business Name: Calpine Gilroy Cogen L.P. Plant No: B1180 (If unknown, leave blank)

2. Name or Description oxidation catalyst Abatement Device No: A- 3

3. Make, Model, and Rated Capacity to be determined

4. Abatement Device Code (See table*) 65 Date of Initial Operation ______

5. With regard to air pollutant flow into this emission point what sources(s) and/or abatement device(s) are **immediately** upstream?

S- 3 S- ___ S- ___ S- ___ S- ___ S- ___
A- ___ A- ___ A- ___ A- ___ A- ___

6. Typical gas stream temperature at inlet: 850 °F

If this form is being submitted as part of an application for an ***Authority to Construct***, completion of the following t...e is mandatory. If not, and the Abatement Device is *already in operation*, completion of the table is requested ... not required.

	Pollutant	Weight Percent Reduction (at typical operation)	Basis Codes (*see table***)
7.	Particulate	0	0
8.	Organics	0	0
9.	Nitrogen Oxides (as NO_2)	0	0
10.	Sulfur Dioxide	0	0
11.	Carbon Monoxide	as necessary to achieve 6.0 ppm outlet concentration	4
12.	Other:		
13.	Other:		

14. ☐ Check box if this Abatement Device burns fuel; complete lines 1, 2 and 15-36 on Form C (using the Abatement Device No. above for the Source No.) and attach to this form.

15. With regard to air pollutant flow from this abatement device, what sources(s), abatement device(s) and/or emission point(s) are ***immediately*** downstream?

S- ___ A- 4 A- ___ P- 3 P- ___ P- ___

...on completing this form: Nancy Matthews	Date: April 19, 2001

P:www\FormA (revised: 1/98)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990

Data Form C
FUEL COMBUSTION SOURCE

(for District use only)

New ☒ Modified ☐ Retro ☐

Form C is for all operations which burn fuel. If the operation also involves evaporation of any organic solvent, complete Form S and attach to this form. If the operation involves a process which generates any other air pollutants, complete Form G and attach to this form.

☐ Check box if this source has a secondary function as an abatement device for some other source(s); complete lines 1, 2, and 7-13 on Form A (using the source number below for the Abatement Device No.) and attach to this form.

(If unknown, leave blank)

1. Company Name: Calpine Gilroy Cogen L.P. Plant No: B1180 Source No. S3
2. Equipment Name & Number, or Description: combustion turbine
3. Make, Model : General Electric LM6000PC Maximum firing rate: 467.5 E6 Btu/hr
4. Date of modification or initial operation: ______ *(if unknown, leave blank)*
5. Primary use (check one): ☒ electrical generation ☐ space heat ☐ waste disposal ☐ testing ☐ abatement device ☐ cogeneration ☐ resource recovery ☐ other ☐ process heat; material heated ______
6. SIC Number 4911 (If unknown leave blank)
7. Equipment type (check one)

Internal combustion
☐ diesel engine
☐ Otto cycle engine Displacement ____ cubic inches
☒ gas turbine
☐ other ______ ____ hp

Incinerator
☐ salvage operation ☐ pathological waste Temperature ____ °F
☐ liquid waste ☐ other ______ Residence time ____ Sec

Others
☐ boiler ☐ dryer
☐ afterburner ☐ oven
☐ flare ☐ furnace Material dried, baked, or heated:
☐ open burning ☐ kiln
☐ other ______

8. Overfire air? ☐ yes ☒ no If yes, what percent (%) ____
9. Flue gas recirculation? ☐ yes ☒ no If yes, what percent (%) ____
10. Air preheat? ☐ yes ☒ no Temperature ____ °F
11. Low NO_x burners? ☐ yes ☒ no Make, Model ______
12. Maximum flame temperature ____ °F
13. Combustion products: Wet gas flowrate 594,824 acfm at 849°F
14. Typical use: 24 hours/day 7 days/week 52 weeks/year
15. Typical % of annual total: Dec-Feb 25% Mar-May 25% Jun-Aug 25% Sep-Nov 25%
16. With regard to air pollutant flow, what source(s) or abatement device(s) are immediately UPSTREAM?
S ____ S ____ S ____ S ____ S ____ S ____ A ____ A ____ A ____

With regard to air pollutant flow, what source(s) or abatement device(s), and/or emission points are immediately DOWNSTREAM?
S ____ S ____ A 3 A 4 P 3 P ____

Person completing this form: Nancy Matthews Date: April 19, 2001

P:www\formC (revised8/98)

FUELS

INSTRUCTIONS: Complete one line in Section A for each fuel. Section B is OPTIONAL. Please use the units at the bottom of each table. N/A means "Not Applicable."

SECTION A: FUEL DATA

	Fuel Name	Fuel Code**	Total Annual Usage***	Maximum Possible Fuel Use Rate	Typical Heat Content	Sulfur Content	Nitrogen Content (optional)	Ash Content (optional)
1.	natural gas	189	18,314,330	467.6E6				
2.								
3.								
4.								
5.								

Use the appropriate units for each fuel	Natural Gas	therm*	Btu/hr	N/A	N/A	N/A	N/A
	Other Gas	MSCF*	MSCF/hr	Btu/MSCF	ppm	N/A	N/A
	Liquid	m gal*	m gal/hr	Btu/m gal	wt%	wt%	wt%
	Solid	ton	ton/hr	Btu/ton	wt%	wt%	wt%

SECTION B: EMISSION FACTORS (optional)

	Fuel Name	Fuel Code**	Particulates		NOx		CO	
			Emission Factor	**Basis Code	Emissio n Factor	**Basis Code	Emission Factor	**Basis Code
1.								
2.								
3.								
4.								

Use the appropriate units for each fuel: *Natural Gas = lb/therm**
*Other Gas = lb/MSCF**
*Liquid = lb/m gal**
Solid = lb/ton

Note: * MSCF = thousand standard cubic feet
* m gal = thousand gallons
* therm = 100,000 BTU
** See tables below for fuel and basis codes
*** Total annual usage is: – Projected usage over next 12 months if equipment is new or modified.
– Actual usage for last 12 months if equipment is existing and unchanged.

**Fuel Codes			
Code	Fuel	Code	Fuel
25	Anthracite coal	189	Natural Gas
33	Bagasse	234	Process gas - blast furnace
35	Bark	235	Process gas - CO
43	Bituminous coal	236	Process gas - coke oven gas
47	Brown coal	238	Process gas - RMG
242	Bunker C fuel oil	237	Process gas - other
80	Coke	242	Residual oil
89	Crude oil	495	RDF
98	Diesel oil	493	Sludge gas
493	Digester gas	511	Landfill gas
100	Distillate oil	256	Solid propellant
128	Gasoline	257	Solid waste
158	Jet fuel	304	Wood - hogged
160	LPG	305	Wood - other
5	Lignite	198	Other - gaseous fuels
7	Liquid waste	200	Other - liquid fuels
494	Municipal solid waste	203	Other - solid fuels

**Basis Codes	
Code	Method
0	Not applicable for this pollutant
1	Source testing or other measurement by plant (attach copy)
2	Source testing or other measurement by BAAQMD (give date)
3	Specifications from vendor (attach copy)
4	Material balance by plant using engineering expertise and knowledge of process
5	Material balance by BAAQMD
6	Taken from AP-42 (compilation of Air Pollutant Emission Factors, EPA)
7	Taken from literature, other than AP-42 (attach copy)
8	Guess

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990

Data Form C
FUEL COMBUSTION SOURCE

(for District use only)

New ☒ Modified ☐ Retro ☐

Form C is for all operations which burn fuel. If the operation also involves evaporation of any organic solvent, complete Form S and attach to this form. If the operation involves a process which generates any other air pollutants, complete Form G and attach to this form.

☐ Check box if this source has a secondary function as an abatement device for some other source(s); complete lines 1, 2, and 7-13 on Form A (using the source number below for the Abatement Device No.) and attach to this form.

1. Company Name: Calpine Gilroy Cogen L.P. Plant No: B1180 Source No. S4 (If unknown, leave blank)
2. Equipment Name & Number, or Description: combustion turbine
3. Make, Model : General Electric LM6000PC Maximum firing rate: 467.5 E6 Btu/hr
4. Date of modification or initial operation: ____________ *(if unknown, leave blank)*
5. Primary use (check one): ☒ electrical generation ☐ space heat ☐ waste disposal ☐ testing ☐ abatement device ☐ cogeneration ☐ resource recovery ☐ other ☐ process heat; material heated ____________
6. SIC Number 4911 (If unknown leave blank)
7. Equipment type (check one)

Internal combustion ☐ diesel engine ☐ Otto cycle engine ☒ gas turbine ☐ other ____________ Displacement ______ cubic inches ______ hp

Incinerator ☐ salvage operation ☐ liquid waste ☐ pathological waste ☐ other ____________ Temperature ______ °F Residence time ______ Sec

Others ☐ boiler ☐ afterburner ☐ flare ☐ open burning ☐ other ____________ ☐ dryer ☐ oven ☐ furnace ☐ kiln Material dried, baked, or heated: ____________

8. Overfire air? ☐ yes ☒ no If yes, what percent (%) ____
9. Flue gas recirculation? ☐ yes ☒ no If yes, what percent (%) ____
10. Air preheat? ☐ yes ☒ no Temperature ______ °F
11. Low NO_x burners? ☐ yes ☒ no Make, Model ____________
12. Maximum flame temperature ______ °F
13. Combustion products: Wet gas flowrate 594,824 acfm at 849°F
14. Typical use: 24 hours/day 7 days/week 52 weeks/year
15. Typical % of annual total: Dec-Feb 25% Mar-May 25% Jun-Aug 25% Sep-Nov 25%
16. With regard to air pollutant flow, what source(s) or abatement device(s) are immediately UPSTREAM?
S ____ S ____ S ____ S ____ S ____ S ____ A ____ A ____ A ____

With regard to air pollutant flow, what source(s) or abatement device(s), and/or emission points are immediately DOWNSTREAM?
S ____ S ____ A 5 A 6 P 4 P ____

Person completing this form: Nancy Matthews Date: April 19, 2001

P:www\formC (revised8/98)

FUELS

INSTRUCTIONS: Complete one line in Section A for each fuel. Section B is OPTIONAL. Please use the units at the bottom of each table. N/A means "Not Applicable."

SECTION A: FUEL DATA

	Fuel Name	*Fuel Code***	*Total Annual Usage****	*Maximum Possible Fuel Use Rate*	*Typical Heat Content*	*Sulfur Content*	*Nitrogen Content (optional)*	*Ash Content (optional)*
1.	natural gas	189	18,314,330	467.6E6				
2.								
3.								
4.								
5.								

Use the appropriate units for each fuel	Natural Gas	therm*	Btu/hr	N/A	N/A	N/A	N/A
	Other Gas	MSCF*	MSCF/hr	Btu/MSCF	ppm	N/A	N/A
	Liquid	m gal*	m gal/hr	Btu/m gal	wt%	wt%	wt%
	Solid	ton	ton/hr	Btu/ton	wt%	wt%	wt%

SECTION B: EMISSION FACTORS (optional)

	Fuel Name	***Fuel Code*****	**Particulates**		**NOx**		**CO**	
			Emission Factor	***Basis Code*	*Emission Factor*	***Basis Code*	*Emission Factor*	***Basis Code*
1.								
2.								
3.								
4.								

Use the appropriate units for each fuel: *Natural Gas = lb/therm**
*Other Gas = lb/MSCF**
*Liquid = lb/m gal**
Solid = lb/ton

Note: * MSCF = thousand standard cubic feet
* m gal = thousand gallons
* therm = 100,000 BTU
** See tables below for fuel and basis codes
*** Total annual usage is: – Projected usage over next 12 months if equipment is new or modified.
– Actual usage for last 12 months if equipment is existing and unchanged.

****Fuel Codes**

Code	*Fuel*	*Code*	*Fuel*
25	Anthracite coal	189	Natural Gas
33	Bagasse	234	Process gas - blast furnace
35	Bark	235	Process gas - CO
43	Bituminous coal	236	Process gas - coke oven gas
47	Brown coal	238	Process gas - RMG
242	Bunker C fuel oil	237	Process gas - other
80	Coke	242	Residual oil
89	Crude oil	495	RDF
98	Diesel oil	493	Sludge gas
493	Digester gas	511	Landfill gas
100	Distillate oil	256	Solid propellant
128	Gasoline	257	Solid waste
158	Jet fuel	304	Wood - hogged
160	LPG	305	Wood - other
[illegible]	Lignite	198	Other - gaseous fuels
	Liquid waste	200	Other - liquid fuels
494	Municipal solid waste	203	Other - solid fuels

****Basis Codes**

Code	*Method*
0	Not applicable for this pollutant
1	Source testing or other measurement by plant (attach copy)
2	Source testing or other measurement by BAAQMD (give date)
3	Specifications from vendor (attach copy)
4	Material balance by plant using engineering expertise and knowledge of process
5	Material balance by BAAQMD
6	Taken from AP-42 (compilation of Air Pollutant Emission Factors, EPA)
7	Taken from literature, other than AP-42 (attach copy)
8	Guess

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990

Data Form C
FUEL COMBUSTION SOURCE

(for District use only)

New ☒ Modified ☐ Retro ☐

Form C is for all operations which burn fuel. If the operation also involves evaporation of any organic solvent, complete Form S and attach to this form. If the operation involves a process which generates any other air pollutants, complete Form G and attach to this form.

☐ Check box if this source has a secondary function as an abatement device for some other source(s); complete lines 1, 2, and 7-13 on Form A (using the source number below for the Abatement Device No.) and attach to this form.

(If unknown, leave blank)

1. Company Name: Calpine Gilroy Cogen L.P. Plant No: B1180 Source No. S5
2. Equipment Name & Number, or Description: combustion turbine
3. Make, Model : General Electric LM6000PC Maximum firing rate: 467.5 E6 Btu/hr
4. Date of modification or initial operation: ________ *(if unknown, leave blank)*
5. Primary use (check one): ☒ electrical generation ☐ space heat ☐ waste disposal ☐ testing ☐ abatement device ☐ cogeneration ☐ resource recovery ☐ other ☐ process heat; material heated ________
6. SIC Number 4911 (If unknown leave blank)
7. Equipment type (check one)

Internal combustion ☐ diesel engine ☐ Otto cycle engine Displacement ____ cubic inches ☒ gas turbine ☐ other ________ ____ hp

Incinerator ☐ salvage operation ☐ pathological waste Temperature ____ °F ☐ liquid waste ☐ other ________ Residence time ____ Sec

Others ☐ boiler ☐ dryer ☐ afterburner ☐ oven ☐ flare ☐ furnace Material dried, baked, or heated: ________ ☐ open burning ☐ kiln ☐ other ________

8. Overfire air? ☐ yes ☒ no If yes, what percent (%) ____
9. Flue gas recirculation? ☐ yes ☒ no If yes, what percent (%) ____
10. Air preheat? ☐ yes ☒ no Temperature ____ °F
11. Low NO_x burners? ☐ yes ☒ no Make, Model ________
12. Maximum flame temperature ____ °F
13. Combustion products: Wet gas flowrate 594,824 acfm at 849°F
14. Typical use: 24 hours/day 7 days/week 52 weeks/year
15. Typical % of annual total: Dec-Feb 25% Mar-May 25% Jun-Aug 25% Sep-Nov 25%
16. With regard to air pollutant flow, what source(s) or abatement device(s) are immediately UPSTREAM?

S ____ S ____ S ____ S ____ S ____ S ____ A ____ A ____ A ____

With regard to air pollutant flow, what source(s) or abatement device(s), and/or emission points are immediately DOWNSTREAM?

S ____ S ____ A 7 A 8 P 5 P ____

Person completing this form: Nancy Matthews Date: April 19, 2001

P:www\formC (revised8/98)

FUELS

INSTRUCTIONS: Complete one line in Section A for each fuel. Section B is OPTIONAL. Please use the units at the bottom of each table. N/A means "Not Applicable."

SECTION A: FUEL DATA

	Fuel Name	*Fuel Code***	*Total Annual Usage****	*Maximum Possible Fuel Use Rate*	*Typical Heat Content*	*Sulfur Content*	*Nitrogen Content (optional)*	*Ash Content (optional)*
1.	natural gas	189	18,314,330	467.6E6				
2.								
3.								
4.								
5.								

Use the appropriate units for each fuel	Natural Gas	therm*	Btu/hr	N/A	N/A	N/A	N/A
	Other Gas	MSCF*	MSCF/hr	Btu/MSCF	ppm	N/A	N/A
	Liquid	m gal*	m gal/hr	Btu/m gal	wt%	wt%	wt%
	Solid	ton	ton/hr	Btu/ton	wt%	wt%	wt%

SECTION B: EMISSION FACTORS (optional)

	Fuel Name	***Fuel Code*****	**Particulates**		**NOx**		**CO**	
			Emission Factor	***Basis Code*	*Emissio n Factor*	***Basis Code*	*Emission Factor*	***Basis Code*
1.								
2.								
3.								
4.								

Use the appropriate units for each fuel: *Natural Gas = lb/therm**
*Other Gas = lb/MSCF**
*Liquid = lb/m gal**
Solid = lb/ton

Note: * MSCF = thousand standard cubic feet
* m gal = thousand gallons
* therm = 100,000 BTU
** See tables below for fuel and basis codes
*** Total annual usage is: – Projected usage over next 12 months if equipment is new or modified.
– Actual usage for last 12 months if equipment is existing and unchanged.

****Fuel Codes**			
Code	***Fuel***	***Code***	***Fuel***
25	Anthracite coal	189	Natural Gas
33	Bagasse	234	Process gas - blast furnace
35	Bark	235	Process gas - CO
43	Bituminous coal	236	Process gas - coke oven gas
47	Brown coal	238	Process gas - RMG
242	Bunker C fuel oil	237	Process gas - other
80	Coke	242	Residual oil
89	Crude oil	495	RDF
98	Diesel oil	493	Sludge gas
493	Digester gas	511	Landfill gas
100	Distillate oil	256	Solid propellant
128	Gasoline	257	Solid waste
158	Jet fuel	304	Wood - hogged
160	LPG	305	Wood - other
[illegible]55	Lignite	198	Other - gaseous fuels
	Liquid waste	200	Other - liquid fuels
[illegible]4	Municipal solid waste	203	Other - solid fuels

****Basis Codes**	
Code	***Method***
0	Not applicable for this pollutant
1	Source testing or other measurement by plant (attach copy)
2	Source testing or other measurement by BAAQMD (give date)
3	Specifications from vendor (attach copy)
4	Material balance by plant using engineering expertise and knowledge of process
5	Material balance by BAAQMD
6	Taken from AP-42 (compilation of Air Pollutant Emission Factors, EPA)
7	Taken from literature, other than AP-42 (attach copy)
8	Guess

*ABATEMENT DEVICE CODES

Code	DEVICE
	ADSORBER (See Vapor Recovery)
	AFTERBURNER
1	CO Boiler
2	Catalytic
3	Direct Flame
4	Flare
5	Furnace-firebox
6	Other
	BAGHOUSE (See Dry Filter)
	CYCLONE (See Dry Inertial Collector and Scrubber)
	DRY FILTER
7	Absolute
8	Baghouse, Pulse Jet
9	Baghouse, Reverse Air
10	Baghouse, Reverse Jet
11	Baghouse, Shaking
12	Baghouse, Simple
13	Baghouse, Other
14	Envelope
15	Moving Belt
16	Other
	DRY INERTIAL COLLECTOR
17	Cyclone, Dynamic
18	Cyclone, Multiple (12 inches dia. or more)
19	Cyclone, Multiple (less than 12 inches dia.)
20	Cyclone, Simple
21	Settling Chamber, Baffled/Louvered
22	Settling Chamber, Simple
23	Other
	ELECTROSTATIC PRECIPITATOR
24	Single Stage
25	Single Stage, Wet
26	Two Stage
27	Two Stage, Wet
28	Other
	INCINERATOR (See Afterburner)
	KNOCK-OUT POT (See Liquid Separator)
	LIQUID SEPARATOR
29	Knock-out Pot
30	Mist Eliminator, Horizontal Pad, Dry
31	Mist Eliminator, Panel, Dry
32	Mist Eliminator, Spray/Irrigated
33	Mist Eliminator, Vertical Tube, Dry
34	Mist Eliminator, Other
35	Other

Code	DEVICE
	MIST ELIMINATOR (See Liquid Separator)
	SCRUBBER
36	Baffle and Secondary Flow
37	Centrifugal
38	Cyclone, Irrigated
39	Fibrous Packed
40	Impingement Plate
41	Impingement and Entrainment
42	Mechanically Aided
43	Moving Bed
44	Packed Bed
45	Preformed Spray
46	Venturi
47	Other
	SETTLING CHAMBER (See Dry Inertial Collector)
	SULFUR DIOXIDE CONTROL
48	Absorption and Regeneration, for Sulfur Plant
49	Claus Solution Reaction, for Sulfur Plant
50	Dual Absorption, for H2S04 Plant
51	Flue Gas Desulfurization, for Fossil Fuel Combustion
52	Reduction and Solution Regeneration, for Sulfur Plant
53	Reduction and Stretford Process, for Sulfur Plant
54	Sodium Sulfite-Bisulfite Scrubber, for H2S04 Plant
55	Other
	VAPOR RECOVERY
56	Adsorption, Activated Carbon/Charcoal
57	Adsorption, Silica
58	Adsorption, Other
59	Balance
60	Compression/Condensation/Absorption
61	Compression/Refrigeration
62	Condenser, Water-Cooled
63	Condenser, Other
64	Other
	MISCELLANEOUS
65	Not classified above

**BASIS CODES

Code	Method
0	Not applicable for this pollutant
1	Source testing or other measurement **by plant**
2	Source testing or other measurement **by BAAQMD**
3	Specifications from vendor
4	Material balance by plant using engineering expertise and knowledge of process
5	Material balance **by BAAQMD** using engineering expertise and knowledge of process
6	Taken from AP-42 ("Compilation of Air Pollutant Emission Factors," EPA)
7	Taken from literature, other than AP-42
8	Guess

Data Form A
ABATEMENT DEVICE

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990

for office use only

Abatement Device: Equipment/process whose primary purpose is to reduce the quantity of pollutant(s) emitted to the atmosphere.

1. Business Name: Calpine Gilroy Cogen L.P. Plant No: B1180 (If unknown, leave blank)

2. Name or Description selective catalytic reduction system Abatement Device No: A- 4

3. Make, Model, and Rated Capacity to be determined

4. Abatement Device Code (See table*) 65 Date of Initial Operation ______

5. With regard to air pollutant flow into this emission point what sources(s) and/or abatement device(s) are **immediately** upstream?

S- 3 **S-** ____ **S-** ____ **S-** ____ **S-** ____

S- ____ **A-** 3 **A-** ____ **A-** ____ **A-** ____ **A-** ____

6. Typical gas stream temperature at inlet: TBD °F

If this form is being submitted as part of an application for an ***Authority to Construct***, completion of the following t is mandatory. If not, and the Abatement Device is *already in operation*, completion of the table is requested bu not required.

	Pollutant	Weight Percent Reduction (at typical operation)	Basis Codes *(see table**)*
7.	Particulate	0	0
8.	Organics	0	0
9.	Nitrogen Oxides (as NO_2)	as necessary to achieve 5.0 ppm outlet concentration	4
10.	Sulfur Dioxide	0	0
11.	Carbon Monoxide	0	0
12.	Other:		
13.	Other:		

14. ☐ Check box if this Abatement Device burns fuel; complete lines 1, 2 and 15-36 on Form C (using the Abatement Device No. above for the Source No.) and attach to this form.

15. With regard to air pollutant flow from this abatement device, what sources(s), abatement device(s) and/or emission point(s) are ***immediately*** downstream?

S- ____ **A-** ____ **A-** ____ **P-** 3 **P-** ____ **P-** ____

F on completing this form: Nancy Matthews	Date: April 19, 2001

*ABATEMENT DEVICE CODES

Code	DEVICE
	ADSORBER (See Vapor Recovery)
	AFTERBURNER
1	CO Boiler
2	Catalytic
3	Direct Flame
4	Flare
5	Furnace-firebox
6	Other
	BAGHOUSE (See Dry Filter)
	CYCLONE (See Dry Inertial Collector and Scrubber)
	DRY FILTER
7	Absolute
8	Baghouse, Pulse Jet
9	Baghouse, Reverse Air
10	Baghouse, Reverse Jet
11	Baghouse, Shaking
12	Baghouse, Simple
13	Baghouse, Other
14	Envelope
15	Moving Belt
16	Other
	DRY INERTIAL COLLECTOR
17	Cyclone, Dynamic
18	Cyclone, Multiple (12 inches dia. or more)
19	Cyclone, Multiple (less than 12 inches dia.)
20	Cyclone, Simple
21	Settling Chamber, Baffled/Louvered
22	Settling Chamber, Simple
23	Other
	ELECTROSTATIC PRECIPITATOR
24	Single Stage
25	Single Stage, Wet
26	Two Stage
27	Two Stage, Wet
28	Other
	INCINERATOR (See Afterburner)
	KNOCK-OUT POT (See Liquid Separator)
	LIQUID SEPARATOR
29	Knock-out Pot
30	Mist Eliminator, Horizontal Pad, Dry
31	Mist Eliminator, Panel, Dry
32	Mist Eliminator, Spray/Irrigated
33	Mist Eliminator, Vertical Tube, Dry
34	Mist Eliminator, Other
35	Other

Code	DEVICE
	MIST ELIMINATOR (See Liquid Separator)
	SCRUBBER
36	Baffle and Secondary Flow
37	Centrifugal
38	Cyclone, Irrigated
39	Fibrous Packed
40	Impingement Plate
41	Impingement and Entrainment
42	Mechanically Aided
43	Moving Bed
44	Packed Bed
45	Preformed Spray
46	Venturi
47	Other
	SETTLING CHAMBER (See Dry Inertial Collector)
	SULFUR DIOXIDE CONTROL
48	Absorption and Regeneration, for Sulfur Plant
49	Claus Solution Reaction, for Sulfur Plant
50	Dual Absorption, for H2S04 Plant
51	Flue Gas Desulfurization, for Fossil Fuel Combustion
52	Reduction and Solution Regeneration, for Sulfur Plant
53	Reduction and Stretford Process, for Sulfur Plant
54	Sodium Sulfite-Bisulfite Scrubber, for H2S04 Plant
55	Other
	VAPOR RECOVERY
56	Adsorption, Activated Carbon/Charcoal
57	Adsorption, Silica
58	Adsorption, Other
59	Balance
60	Compression/Condensation/Absorption
61	Compression/Refrigeration
62	Condenser, Water-Cooled
63	Condenser, Other
64	Other
	MISCELLANEOUS
65	Not classified above

**BASIS CODES

Code	Method
0	Not applicable for this pollutant
1	Source testing or other measurement **by plant**
2	Source testing or other measurement **by BAAQMD**
3	Specifications from vendor
4	Material balance by plant using engineering expertise and knowledge of process
5	Material balance **by BAAQMD** using engineering expertise and knowledge of process
6	Taken from AP-42 ("Compilation of Air Pollutant Emission Factors," EPA)
7	Taken from literature, other than AP-42
8	Guess

Data Form A
ABATEMENT DEVICE

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990

for office use only

Abatement Device: Equipment/process whose primary purpose is to reduce the quantity of pollutant(s) emitted to the atmosphere.

1. Business Name: Calpine Gilroy Cogen L.P. Plant No: B1180 (If unknown, leave blank)

2. Name or Description: oxidation catalyst Abatement Device No: A- 5

3. Make, Model, and Rated Capacity: to be determined

4. Abatement Device Code (See table*): 65 Date of Initial Operation: ________

5. With regard to air pollutant flow into this emission point what sources(s) and/or abatement device(s) are **immediately** upstream?

S- 4 **S-** ____ **S-** ____ **S-** ____ **S-** ____ **S-** ____
A- ____ **A-** ____ **A-** ____ **A-** ____ **A-** ____

6. Typical gas stream temperature at inlet: 850 °F

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	Pollutant	Weight Percent Reduction (at typical operation)	Basis Codes (*see table***)
7.	Particulate	0	0
8.	Organics	0	0
9.	Nitrogen Oxides (as NO_2)	0	0
10.	Sulfur Dioxide	0	0
11.	Carbon Monoxide	as necessary to achieve 6.0 ppm outlet concentration	4
12.	Other:		
13.	Other:		

14. ☐ Check box if this Abatement Device burns fuel; complete lines 1, 2 and 15-36 on Form C (using the Abatement Device No. above for the Source No.) and attach to this form.

15. With regard to air pollutant flow from this abatement device, what sources(s), abatement device(s) and/or emission point(s) are ***immediately*** downstream?

S- ____ **A-** 6 **A-** ____ **P-** 4 **P-** ____ **P-** ____

Person completing this form: Nancy Matthews	Date: April 19, 2001

P:www\FormA (revised: 1/98)

*ABATEMENT DEVICE CODES

Code	DEVICE
	ADSORBER (See Vapor Recovery)
	AFTERBURNER
1	CO Boiler
2	Catalytic
3	Direct Flame
4	Flare
5	Furnace-firebox
6	Other
	BAGHOUSE (See Dry Filter)
	CYCLONE (See Dry Inertial Collector and Scrubber)
	DRY FILTER
7	Absolute
8	Baghouse, Pulse Jet
9	Baghouse, Reverse Air
10	Baghouse, Reverse Jet
11	Baghouse, Shaking
12	Baghouse, Simple
13	Baghouse, Other
14	Envelope
15	Moving Belt
16	Other
	DRY INERTIAL COLLECTOR
17	Cyclone, Dynamic
18	Cyclone, Multiple (12 inches dia. or more)
19	Cyclone, Multiple (less than 12 inches dia.)
20	Cyclone, Simple
21	Settling Chamber, Baffled/Louvered
22	Settling Chamber, Simple
23	Other
	ELECTROSTATIC PRECIPITATOR
24	Single Stage
25	Single Stage, Wet
26	Two Stage
27	Two Stage, Wet
28	Other
	INCINERATOR (See Afterburner)
	KNOCK-OUT POT (See Liquid Separator)
	LIQUID SEPARATOR
29	Knock-out Pot
30	Mist Eliminator, Horizontal Pad, Dry
31	Mist Eliminator, Panel, Dry
32	Mist Eliminator, Spray/Irrigated
33	Mist Eliminator, Vertical Tube, Dry
34	Mist Eliminator, Other
35	Other

Code	DEVICE
	MIST ELIMINATOR (See Liquid Separator)
	SCRUBBER
36	Baffle and Secondary Flow
37	Centrifugal
38	Cyclone, Irrigated
39	Fibrous Packed
40	Impingement Plate
41	Impingement and Entrainment
42	Mechanically Aided
43	Moving Bed
44	Packed Bed
45	Preformed Spray
46	Venturi
47	Other
	SETTLING CHAMBER (See Dry Inertial Collector)
	SULFUR DIOXIDE CONTROL
48	Absorption and Regeneration, for Sulfur Plant
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	VAPOR RECOVERY
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57	Adsorption, Silica
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64	Other
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Code	Method
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1	Source testing or other measurement **by plant**
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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990

for office use only

Abatement Device: Equipment/process whose primary purpose is to reduce the quantity of pollutant(s) emitted to the atmosphere.

1. Business Name: Calpine Gilroy Cogen L.P. Plant No: B1180 (If unknown, leave blank)

2. Name or Description selective catalytic reduction system Abatement Device No: A-6

3. Make, Model, and Rated Capacity to be determined

4. Abatement Device Code (See table*) 65 Date of Initial Operation ______

5. With regard to air pollutant flow into this emission point what sources(s) and/or abatement device(s) are **immediately** upstream?

S- 4 S- ___ S- ___ S- ___ S- ___

S- ___ A- 5 A- ___ A- ___ A- ___ A- ___

6. Typical gas stream temperature at inlet: TBD °F

If this form is being submitted as part of an application for an ***Authority to Construct***, completion of the following is mandatory. If not, and the Abatement Device is *already in operation*, completion of the table is requested but not required.

	Pollutant	Weight Percent Reduction (at typical operation)	Basis Codes (*see table***)
7.	Particulate	0	0
8.	Organics	0	0
9.	Nitrogen Oxides (as NO_2)	as necessary to achieve 5.0 ppm outlet concentration	4
10.	Sulfur Dioxide	0	0
11.	Carbon Monoxide	0	0
12.	Other:		
13.	Other:		

14. ☐ Check box if this Abatement Device burns fuel; complete lines 1, 2 and 15-36 on Form C (using the Abatement Device No. above for the Source No.) and attach to this form.

15. With regard to air pollutant flow from this abatement device, what sources(s), abatement device(s) and/or emission point(s) are ***immediately*** downstream?

S- ___ A- ___ A- ___ P- 4 P- ___ P- ___

Person completing this form: Nancy Matthews	Date: April 19, 2001

P:\www\FormA (revised: 1/98)

*ABATEMENT DEVICE CODES

Code	DEVICE
	ADSORBER (See Vapor Recovery)
	AFTERBURNER
1	CO Boiler
2	Catalytic
3	Direct Flame
4	Flare
5	Furnace-firebox
6	Other
	BAGHOUSE (See Dry Filter)
	CYCLONE (See Dry Inertial Collector and Scrubber)
	DRY FILTER
7	Absolute
8	Baghouse, Pulse Jet
9	Baghouse, Reverse Air
10	Baghouse, Reverse Jet
11	Baghouse, Shaking
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15	Moving Belt
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34	Mist Eliminator, Other
35	Other

Code	DEVICE
	MIST ELIMINATOR (See Liquid Separator)
	SCRUBBER
36	Baffle and Secondary Flow
37	Centrifugal
38	Cyclone, Irrigated
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40	Impingement Plate
41	Impingement and Entrainment
42	Mechanically Aided
43	Moving Bed
44	Packed Bed
45	Preformed Spray
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Code	Method
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Data Form A
ABATEMENT DEVICE

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street . . . San Francisco, CA 94109. . . (415) 749-4990

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1. Business Name: Calpine Gilroy Cogen L.P. Plant No: B1180 (If unknown, leave blank)

2. Name or Description oxidation catalyst Abatement Device No: A- 7

3. Make, Model, and Rated Capacity to be determined

4. Abatement Device Code (See table*) 65 Date of Initial Operation ______

5. With regard to air pollutant flow into this emission point what sources(s) and/or abatement device(s) are **immediately** upstream?

S- 5 S- ____ S- ____ S- ____ S- ____ S- ____
A- ____ A- ____ A- ____ A- ____ A- ____

6. Typical gas stream temperature at inlet: 850 °F

If this form is being submitted as part of an application for an ***Authority to Construct***, completion of the following table is mandatory. If not, and the Abatement Device is *already in operation*, completion of the table is requested but not required.

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10.	Sulfur Dioxide	0	0
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14. ☐ Check box if this Abatement Device burns fuel; complete lines 1, 2 and 15-36 on Form C (using the Abatement Device No. above for the Source No.) and attach to this form.

15. With regard to air pollutant flow from this abatement device, what sources(s), abatement device(s) and/or emission point(s) are ***immediately*** downstream?

S- ____ A- 8 A- ____ P- 5 P- ____ P- ____

Person completing this form: Nancy Matthews	Date: April 19, 2001

P:www\FormA (revised: 1/98)

*ABATEMENT DEVICE CODES

Code	DEVICE
	ADSORBER (See Vapor Recovery)
	AFTERBURNER
1	CO Boiler
2	Catalytic
3	Direct Flame
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33	Mist Eliminator, Vertical Tube, Dry
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	MIST ELIMINATOR (See Liquid Separator)
	SCRUBBER
36	Baffle and Secondary Flow
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63	Condenser, Other
64	Other
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1. Business Name: Calpine Gilroy Cogen L.P. Plant No: B1180 (If unknown, leave blank)
2. Name or Description selective catalytic reduction system Abatement Device No: A- 8
3. Make, Model, and Rated Capacity to be determined
4. Abatement Device Code (See table*) 65 Date of Initial Operation ______
5. With regard to air pollutant flow into this emission point what sources(s) and/or abatement device(s) are **immediately** upstream?

S- 5 **S-** ____ **S-** ____ **S-** ____ **S-** ____

S- ____ **A-** 7 **A-** ____ **A-** ____ **A-** ____ **A-** ____

6. Typical gas stream temperature at inlet: TBD °F

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10.	Sulfur Dioxide	0	0
11.	Carbon Monoxide	0	0
12.	Other:		
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14. ☐ Check box if this Abatement Device burns fuel; complete lines 1, 2 and 15-36 on Form C (using the Abatement Device No. above for the Source No.) and attach to this form.
15. With regard to air pollutant flow from this abatement device, what sources(s), abatement device(s) and/or emission point(s) are ***immediately*** downstream?

S- ____ **A-** ____ **A-** ____ **P-** 5 **P-** ____ **P-** ____

I on completing this form: Nancy Matthews	Date: April 19, 2001

P:www\FormA (revised: 1/98)

*ABATEMENT DEVICE CODES

Code	DEVICE
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	AFTERBURNER
1	CO Boiler
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7	Taken from literature, other than AP-42
8	Guess

APPLICATION TO THE
BAY AREA AIR QUALITY MANAGEMENT DISTRICT

for

AUTHORITY TO CONSTRUCT
and
PERMIT TO OPERATE

THREE COMBUSTION GAS TURBINES

at the

CALPINE GILROY POWER PLANT
GILROY, CALIFORNIA

Submitted by:

Calpine Gilroy Cogen, L.P.
P.O. Box 1764
Gilroy, California 95021

April 2001

Prepared by:

Sierra Research, Inc.
1801 J Street
Sacramento, California 95814
(916) 444-6666

SUMMARY

Calpine Gilroy Cogen, L.P. (Calpine) requests an Authority to Construct and a Permit to Operate for three new combustion gas turbines to be installed at the Gilroy Power Plant. Calpine proposes to install three nominal 49.6 MW General Electric LM6000PC simple cycle combustion gas turbines. The units will produce electricity to meet peak electricity demands.

The LM6000PC combustion gas turbines will incorporate best available control technology (BACT)—including water injection or dry low-NOx burners and selective catalytic reduction for NOx control, and an oxidation catalyst for carbon monoxide control—to reduce emissions of all criteria pollutants. The turbines will employ inlet air chilling to maintain turbine output at elevated temperatures. Calpine proposes to limit annual fuel consumption by the turbines to 5,494,300 MMBtu (HHV) (equivalent to approximately 3900 full-load hours per year per turbine) and to limit NOx emissions from the three new turbines to 39.5 tons per year. These operating and emissions limits will keep the emissions from the new units below significance thresholds.

APPLICATION TO THE
BAY AREA AIR QUALITY MANAGEMENT DISTRICT
for
AUTHORITY TO CONSTRUCT
and
PERMIT TO OPERATE

THREE COMBUSTION GAS TURBINE S
at
GILROY POWER PLANT
GILROY, CALIFORNIA

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APPLICATION TO THE
BAY AREA AIR QUALITY MANAGEMENT DISTRICT
for
AUTHORITY TO CONSTRUCT
and
PERMIT TO OPERATE

THREE COMBUSTION GAS TURBINES
at the
GILROY POWER PLANT
GILROY, CALIFORNIA

I. PROJECT DESCRIPTION

A. Applicant's Name and Business Description

Name of Applicant:	Calpine Gilroy Cogen, L.P. (Calpine)
Mailing Address:	P.O. Box 1764 Gilroy, California 95021
Facility Address:	Calpine Gilroy Cogen, L.P. 1400 Pacheco Pass Highway Gilroy, California 95020
General Business:	Electrical power generation and steam production
Submitting Official:	Bob McCaffrey Calpine Gilroy Cogen, L.P. (408) 847-5328
Facility Operator:	Calpine Gilroy Cogen, L.P.
Consultants:	Sierra Research, Inc. 1801 J Street Sacramento, California 95814 Contact: Nancy Matthews (916) 444-6666
Type of Use Entitlement:	Calpine owns and operates the equipment described in this application.
Estimated Construction Date:	Installation of the gas turbines is anticipated to begin upon issuance of the Authority to Construct on May 25, 2001.

B. Type of Application

This is an application for an Authority to Construct and Permit to Operate for a non-major modification at an existing facility.

C. General Purpose

The goal of the project is to provide the Gilroy Power Plant with additional electrical generating capacity to meet peak electricity demands. The new gas turbines will be a simple cycle design.

D. Facility Description

The Gilroy Power Plant is located on Pacheco Pass Highway, east of Highway 101, in the city of Gilroy in Santa Clara County, as illustrated in Figure 1. The 120 MW combined cycle cogeneration plant generates electricity and supplies steam to Gilroy Foods for use in its manufacturing processes. The Facility consists of the following components:

- 87 MW (nominal) combined cycle combustion gas turbine with oxidation catalyst, 300,000 lb/hr heat recovery steam generator (HRSG), 37.6 MW steam turbine generator;
- 272 MMBtu/hr condenser and 24,000 gpm cooling tower; and
- Two 104 MMBtu/hr auxiliary boilers.

The combustion of natural gas in the combustion turbine drives a gas turbine-generator that produces electricity. The HRSG extracts waste heat from the turbine exhaust and produces high-pressure superheated steam and saturated steam. The superheated steam is injected in the combustion gas turbine for NOx control. The saturated steam is provided to Gilroy Foods. The HRSG also contains an oxidation catalyst that controls CO emissions from the combustion gas turbine. The auxiliary boilers produce saturated steam for Gilroy Foods when the combustion gas turbine is not operating or when steam turbine power production must be maximized to meet peak power demands. Design specifications for the existing sources are summarized in Table 1.

Figure 1
Location of the Gilroy Power Plant

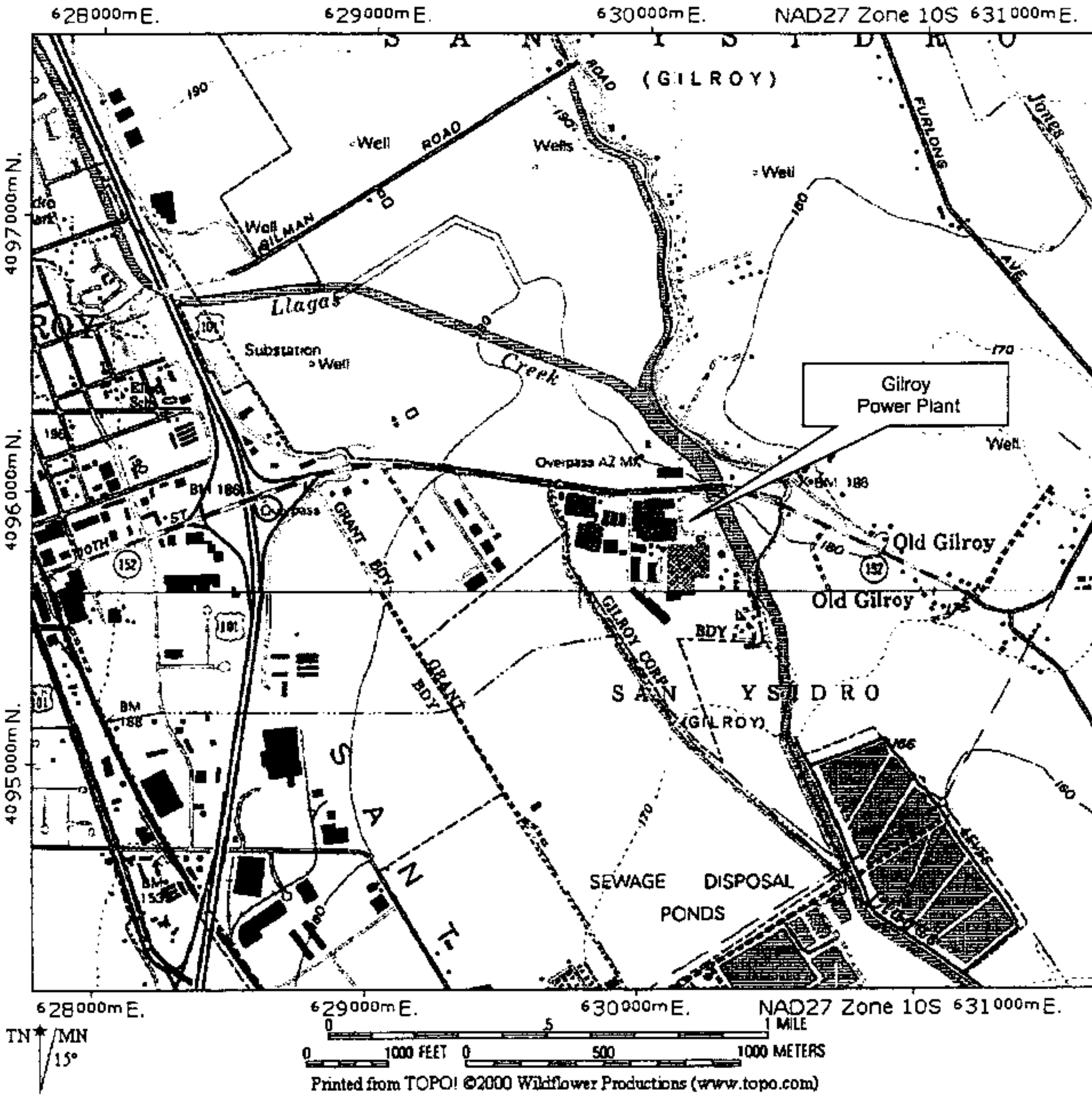


Table 1
Design Specifications for Existing Sources

Device	Combustion Gas Turbine	Cooling Tower	Auxiliary Boiler #1	Auxiliary Boiler #2
Manufacturer	General Electric	Lilie-Hoffmann	Nebraska	Nebraska
Model	EA 7001	N/A	NSE68	NSE68
Fuels	Natural gas Fuel Oil	N/A	Natural gas Fuel Oil	Natural gas Fuel Oil
Nominal Capacity	1085 MMBtu/hr 87 MW	24,000 gpm	104 MMBtu/hr	104 MMBtu/hr
Emission Controls	Steam Injection Oxidation Catalyst	N/A	N/A	N/A

E. Equipment and Process Description – New LM6000PC Combustion Gas Turbines

The proposed gas turbines are General Electric LM6000PC combustion gas turbines driving nominal 49.6 MW turbine generators. The combustion gas turbines will be fueled exclusively with natural gas. The combustion gas turbines will be equipped with water injection or dry low-NOx burners to control NOx emissions and inlet air chillers to maintain turbine output at elevated temperatures. Post-combustion air pollution controls will include SCR for NOx control and oxidation catalysts for carbon monoxide (CO) control. The new combustion gas turbines will be constructed at the existing Gilroy Power Plant site. The combustion gas turbines will be operated up to 24 hours per day, 7 days per week, 52 weeks per year. Equipment specifications for the new combustion gas turbines are summarized in Table 2. A plot plan showing the locations of the new units is included as Figure 2. Engineering specifications are contained in Appendix A.

A fuel analysis, obtained from the Gilroy Power Plant, is summarized in Table 3.

Table 2
New LM6000PC Combustion Gas Turbine Design Specifications

Manufacturer	General Electric
Model	LM6000PC
Fuel	Natural gas
Design Ambient Temperature [1]	33.8 °F
Nominal Heat Input Rate	467.6 MMBtu/hr @ HHV
Nominal Power Generation Rate	49.6 MW
Exhaust Temperature	825 °F
Exhaust Flow Rate	591,693 acfm
Exhaust O_2 Concentration, dry volume	14.56%
Exhaust CO_2 Concentration, dry volume	3.70%
Exhaust Moisture Content, wet volume	10.18%
Emission Controls	Water Injection or dry low-NOx burners and SCR (5 ppmv NOx @ 15% O_2) Oxidation Catalyst (6 ppmv CO @ 15% O_2)

Notes: [1] Low-temperature scenario.

Figure 2

Plot Plan

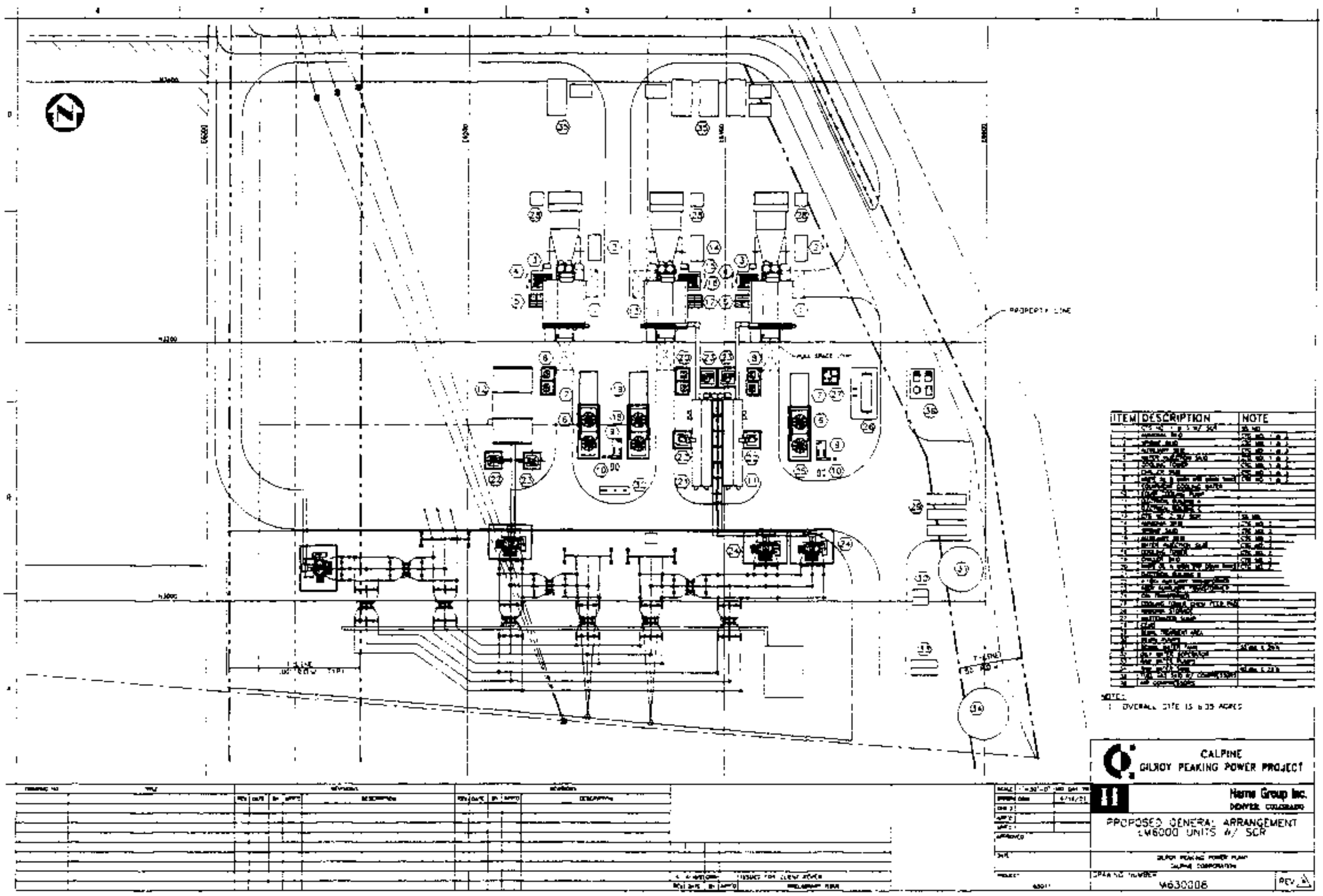


Table 3 Nominal Fuel Properties – Natural Gas	
Natural Gas	Average Concentration, Volume
CH_4	95.85 %
C_2H_6	1.89 %
N_2	0.54 %
CO_2	1.30 %
S	neg
Higher Heating Value	1022 Btu/scf

F. Combustion Gas Turbine Operations

1. New LM6000PC Combustion Gas Turbines

General Electric provided turbine performance specifications for three temperature scenarios—high temperature (97.7 °F), average temperature (59.9 °F), and low temperature (33.8 °F). The low-temperature scenario was used to characterize maximum emissions because it was the worst-case scenario. Daily operations are based upon full-load operation of three turbines for 24 hours. Annual fuel use will be limited to the equivalent of approximately 3900 full-load hours per year per turbine. Operating conditions, as summarized in Table 4, were established to provide the basis for the calculation of project and facility emissions.

Table 4 LM6000PC Combustion Gas Turbine Operations		
Interval	Heat Input, MMBtu (HHV)	
	Each Turbine	Total, Three Turbines
Hourly	467.6	1,402.8
Daily	11,222.4	33,667.2
Annual	4,096,176	5,494,300

2. Existing GE 7EA Combustion Gas Turbine

No modifications to the existing gas turbine are proposed as part of this project.

II. EMISSION ASSESSMENT

Criteria pollutants emitted from the combustion gas turbines include NOx, sulfur oxides (SOx), CO, POCs and particulate matter less than 10 microns in diameter (PM_{10}). This section of the application presents calculated emissions from the new turbines.

The combustion gas turbines also will emit trace levels of toxic air contaminants (TACs), including ammonia. This section also presents the maximum TAC emissions from the proposed combustion gas turbines. Tables containing the detailed emission calculations are contained in Appendix B.

A. Criteria Pollutant Emissions – LM6000PC Combustion Gas Turbines

Proposed maximum emissions from the LM6000PC combustion gas turbines were estimated on an hourly, daily, and annual basis.

Emissions of NOx, CO, and POC were calculated from emission limits (in ppmv @ 15% O_2) and the exhaust flow rates. The NOx emission limit reflects the application of SCR. The POC emission limit reflects the application of good combustion practices. The CO emission limit reflects the expected performance of the oxidation catalyst. Maximum emissions were based on the exhaust rate (215,069 dscfm @ 15% O_2) associated with the heat input rates shown in Table 4.

SOx emissions were calculated from the heat input (in MMBtu) and a SOx emission factor (in lb/MMBtu). A SOx emission factor of 0.0007 lb/MMBtu was selected based upon an expected fuel sulfur content of 4 ppm by weight. Maximum SOx emissions were calculated using the heat input rates in Table 4.

Maximum hourly PM_{10} emissions were obtained from manufacturer's guarantees for LM6000 combustion gas turbines in previous applications.

Proposed maximum emissions for the LM6000PC combustion gas turbines are summarized in Table 5. The BACT analysis upon which the emission factors are based is presented in Part III.

Table 5 **Proposed Maximum Emissions – LM6000PC Combustion Gas Turbines**					
	Maximum Emissions				
	NOx	SOx	CO	POC	PM_{10}
Emission Limit (ppmv @ 15% O_2)	5[1]	0.139	6[1]	2[1]	n/a
Emission Factor (lb/MMBtu)	0.018	0.0007[2]	0.0133	0.0025	n/a
Pounds per hour, each unit	8.40	0.33	6.13	1.17	2.5[3]
Pounds per hour, three turbines	25.2	1.0	18.4	3.5	7.5
Pounds per day, each unit	201.6	7.9	147.1	28.1	60.0
Pounds per day, three turbines	604.8	23.8	441.4	84.2	180.0
Tons per year, three turbines	39.5	1.9	36.0	6.9	14.7

Notes: [1] Specified in Guidance for Power Plant Siting and Best Available Control Technology, California Air Resources Board (CARB), June 1999.
[2] Derived from a fuel sulfur limit of 4 ppm by weight.
[3] Obtained from manufacturer's guarantees for similar LM6000 combustion gas turbine installations.

B. Toxic Air Contaminant Emissions

Maximum hourly and annual TAC emissions were estimated for the proposed LM6000PC combustion gas turbines. Maximum proposed TAC emissions were calculated from the heat input rate (in MMBtu/hr), emission factors (in lb/mmcf), and the nominal higher heating value (i.e., 1022 Btu/scf). Emissions were based on a heat input rates shown in Table 4. The ammonia emission factor was derived from an ammonia slip limit of 10 ppmv @ 15% O_2, which constitutes BACT for ammonia emissions from an SCR reactor. Other emission factors were obtained from the California Air Resources Board's CATEF database for gas turbines. TAC emissions are summarized in Table 6.

Table 6 Maximum Proposed TAC Emissions – LM6000PC Combustion Gas Turbines			
Compound	Emission Factor (lb/mmcf)[1]	Maximum Proposed Emissions, three turbines	
		(lb/hr)	(lb/year)
Ammonia	10 ppm	18.7	73,085
Propylene	0.77	1.06	4,140
Hazardous Air Pollutants			
Acetaldehyde	0.0686	0.09	368.8
Acrolein	0.0189	0.03	101.6
Benzene	0.0136	0.02	73.1
1,3-Butadiene	0.000127	$1.74x10^{-4}$	0.7
Ethylbenzene	0.0179	0.02	96.2
Formaldehyde	0.110	0.15	591.4
Hexane	0.259	0.36	1,392
Naphthalene	0.00166	$2.28x10^{-3}$	8.9
PAHs	0.00066	$9.06x10^{-4}$	3.5
Propylene Oxide	0.0478	0.07	257.0
Toluene	0.0710	0.10	381.7
Xylene	0.0261	0.04	140.3
TOTAL HAPs		0.87	3,415.6

Notes: [1] Obtained from the CATEF database for natural gas-fired combustion gas turbines.
[2] Based upon an exhaust NH_3 limit of 10 ppmv @ 15% O_2.

III. COMPLIANCE WITH APPLICABLE REQUIREMENTS

District rules and regulations applicable to the proposed LM6000PC combustion gas turbine project at Calpine Gilroy Cogen include the following:

- Regulation 2-1-301 and 2-1-302 – Permits Required
- Regulation 2, Rule 2 – New Source Review
- Regulation 3 – Permit Fees
- Regulation 6 – Particulate Matter and Visible Emissions Standards
- Regulation 9, Rule 1 – Sulfur Dioxide
- Regulation 9, Rule 9 – Nitrogen Oxides from Stationary Gas Turbines
- Regulation 10 – Standards of Performance for New Stationary Sources
- Risk Management Policy for Carcinogenic Emissions

The compliance of the proposed LM6000PC turbines with each of the applicable District rules and regulations is discussed below.

A. Regulation 2-1-301 and 2-1-302 – Permits Required

These rules specify that any facility installing non-exempt equipment that causes or controls the emission of air pollutants must first obtain an Authority to Construct and Permit to Operate from the District. This application for the proposed installation of three LM6000PC combustion gas turbines at Calpine Gilroy Cogen satisfies this requirement.

B. Regulation 2, Rule 2 – New Source Review

The District adopted Regulation 2, Rule 2 to establish pre-construction review requirements for new and modified sources. These requirements are intended to ensure that the operation of these sources does not interfere with the attainment or maintenance of ambient air quality standards, and to provide for no net increase in nonattainment pollutant emissions from major sources. Preconstruction review includes the following:

- BACT;
- Emission offsets; and
- Ambient air quality impact analysis.

1. Best Available Control Technology

Rule 2-2-301 requires an applicant to apply BACT to any source that has an increase in emissions of NOx, SOx, CO, POC, or PM_{10} and that has a potential to emit in excess of 10 pounds per day.

The maximum proposed emissions from the new turbines, presented previously in Table 5, are compared with the District's BACT thresholds in Table 7. Emissions of all pollutants will exceed the District's BACT thresholds. The following was determined to be BACT for this project:

- NOx emission limit of 5 ppmv @ 15% O_2. At a design exhaust NOx concentration of 5 ppmv at 15% O_2, the proposed LM6000PC combustion gas turbines will comply with the BACT NOx emission limit.

- CO emission limit of 6 ppmv @ 15% O_2. The proposed project will comply with this CO limit.

- POC emission limit of 2 ppmv @ 15% O_2. At a design exhaust POC concentration of 2 ppmv at 15% O_2, the proposed LM6000PC combustion gas turbines will comply with the BACT POC emission limit.

- Use of natural gas and good combustion practices to minimize emissions of SO_2 and PM_{10}.

Table 7
Comparison with District BACT Thresholds

Pollutant	Maximum Emissions (lb/day)	BACT Threshold (lb/day)	BACT Required?
NOx	604.8	10.0	yes
SOx	23.8	10.0	yes
CO	441.4	10.0	yes
POC	84.2	10.0	yes
PM_{10}	180.0	10.0	yes

2. <u>Emission Offsets</u>

Because the Calpine Gilroy Cogen facility will be permitted to emit more than 15 tons per year of NOx and POC following the proposed modification, Rule 2-2-302 requires the applicant to provide offsets for any increase in NOx and POC emissions at a ratio of 1.15 to 1.0. The required offsets will be provided from certificates currently held by Calpine Corporation. Facility potential to emit for SO_2 and PM_{10} will remain below 100 tons per year, so no offsets for net increases in emissions of those pollutants are required for this project.

Table 8 Comparison with District Offset Thresholds					
Pollutant	Potential to Emit, Existing Turbine (tpy)	Net Increase in Emissions, LM6000 Turbines (tpy)	Total Facility Potential to Emit (tpy)	Offset Threshold (tpy)	Offsets Required (tpy)
NOx	324	39.5	363.5	15	45.4
SOx	3	2.0	5	100	--
CO	52	36	88	n/a	n/a
POC	10	6.9	17	15	7.9
PM_{10}	9	14.8	23.8	100	--

3. Ambient Air Quality Impacts

The applicant has performed a screening ambient air quality modeling analysis to demonstrate that impacts from the proposed facility will not be significant. The SCREEN3 model was used with a 1.0 gram per second emission rate to evaluate ambient impacts. Downwash effects from the SCR unit were considered. A detailed description of modeling procedures and stack parameters is included as Appendix C. The results of the modeling analysis are summarized in Table 9 below.

Table 9 Summary of Screening Modeling Analysis									
	Pollutant and Averaging Period								
	NOx, 1-hr	NOx, annual	SO_2, 1-hr	SO_2, 24-hr	SO_2, annual	CO, 1-hr	CO, 8-hr	PM_{10}, 24-hr	PM_{10}, annual
Total Impact, 3 turbines	29.6	1.1	1.1	0.4	0.05	21.6	15.6	4.5	0.05

C. Regulation 3 – Permit Fees

The applicant is submitting payment in full for the initial fee, the filing fee, and the permit to operate fee under separate cover.

D. Regulation 6 – Particulate Matter and Visible Emissions Standards

Visible emissions from the engines will not exceed 20% (#1 on the Ringelmann chart). Particulate emissions will not exceed 0.003 g/dscf (based on 2.5 lb/hr and 176,432 dscfm [Case 4]).

E. Regulation 9, Rule 1 – Sulfur Dioxide

The expected fuel sulfur content of 4 grains per 100 dscf is well below the rule limit of 0.5% by weight. Compliance with the ground-level SO_2 concentration limits is demonstrated in Table 10 below.

Table 10 Maximum Ground-Level SO_2 Concentrations		
	Averaging Period	
	one hour	24 hours
Modeled Impact, ug/m^3 (three turbines)	1.08	0.43
Modeled Impact, ppm	0.0004	0.00016
Rule Limit, ppm	0.25	0.05

F. Regulation 9, Rule 9 – Nitrogen Oxides from Stationary Gas Turbines

Rule 9-9-301.3 limits NOx from gas turbines in this size range to 9 ppmv when equipped with SCR. The proposed 5 ppmv limit for the new LM6000 turbines is well below the rule limit.

G. Regulation 10 – Standards of Performance for New Stationary Sources

Regulation 10 incorporates, by reference, the federal Standards of Performance for New Stationary Sources (NSPS). The NSPS applicable to new natural gas-fired combustion gas turbines is found in Subpart GG. Subpart GG applies to gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (Gj/hr), or 10.15 MMBtu/hr, @ HHV. The proposed LM6000PC combustion gas turbine has a heat input rating of 467.6 MMBtu/hr @ HHV. Therefore, the NSPS is applicable to the proposed LM6000PC combustion gas turbine project.

The NSPS limits NOx emissions from gas turbines to 75 ppm with adjustments for efficiency and fuel nitrogen content. The proposed 5 ppm NOx emission limit for the new turbines is well below the NSPS limit.

A combustion gas turbine is also subject to a SOx emission limit of 0.015% by volume (150 ppmv) @ 15% O_2. At a design exhaust SOx concentration of 0.14 ppmv @ 15% O_2, the proposed LM6000PC combustion gas turbines will comply with the NSPS SOx emission limit. The NSPS also limits the sulfur content of fuel to 0.8% by weight. The nominal fuel sulfur content (4 ppm by weight) is well below this limit.

H. Risk Management Policy for Carcinogenic Emissions

The applicant has performed a screening health risk assessment to ensure that the toxic air contaminant emissions from the proposed project will not result in a carcinogenic risk that exceeds 1 in one million. The details of the risk assessment are provided in

Appendix D. The screening health risk assessment shows that carcinogenic risk from the project is not expected to exceed 0.3 in one million.

Appendix A

Emissions and Operating Parameters for New Turbines

Calpine Gilroy Peakers
Emissions and Operating Parameters for New Turbines

	Case 1	Case 2	Case 3	Case 4	Case 5
	33.8 deg no chilling	59.9 deg chilling	59.9 deg no chilling	97.7 deg no chilling	97.7 chilling
Ambient Temp, F	33.8	59.9	59.9	97.7	97.7
GT Load, %	100	100	100	100	100
GT heat input, MMBtu/hr (HHV)	467.6	460.1	449.8	364.8	460
Stack flow, lb/hr	1,061,080	1,044,868	1,021,568	872,664	1,043,534
Stack flow, dscfm	215,069	210,860	206,113	176,432	210,536
Stack flow, acfm	591,693	594,824	583,852	505,822	594,136
Stack temp, F	825	849	854	873	849
Stack exhaust, vol %					
O2 (dry)	14.56	14.46	14.46	14.80	14.45
CO2 (dry)	3.66	3.72	3.72	3.52	3.72
H2O	10.18	10.76	10.79	10.59	10.80
Emissions					
NOx, ppmvd @ 15% O2	5	5	5	5	5
NOx, lb/hr	8.40	8.35	8.17	6.63	8.36
NOx, lb/MMBtu	0.0180	0.0181	0.0182	0.0182	0.0182
SO2, ppmvd @ 15% O2	0.139	0.139	0.139	0.139	0.139
SO2, lb/hr	0.33	0.3	0.29	0.240	0.300
SO2, lb/MMBtu	0.0007	0.0007	0.0007	0.0007	0.0007
CO, ppmvd @ 15% O2	6.00	6.00	6.00	6.00	6.00
CO, lb/hr	6.13	6.10	5.97	4.84	6.11
CO, lb/MMBtu	0.0131	0.0133	0.0133	0.0133	0.0133
VOC, ppmvd @ 15% O2	2.00	2.00	2.00	2.00	2.00
VOC, lb/hr	1.17	1.17	1.14	0.93	1.16
VOC, lb/MMBtu	0.0025	0.0025	0.0025	0.0025	0.0025
PM10, lb/hr	2.5	2.5	2.5	2.5	2.5
PM10, lb/MMBtu	0.0053	0.0054	0.0056	0.0069	0.0054
PM10, gr/dscf	0.00213	0.00199	0.00183	0.00282	0.00251
NH3, ppmvd@15% O2	10.0	10.0	10.0	10.0	10.0
NH3, lb/hr	6.22	6.19	6.05	4.91	6.19

Calpine Gilroy Peaking Plant
Calculation of Annual Fuel Use

467.6	MMBtu/hr of natural gas per turbine at 38.8 deg F
1,022	Btu/cf
3,917	hours per year of operation per turbine
1,831,433	MMBtu per year of natural gas per turbine
1,792.0	MMcf per year of natural gas per turbine
3	turbines
5,494,300	MMBtu per year of natural gas total
5,376.0	MMcf per year of natural gas total

Appendix B

Emissions Calculations

Calpine Gilroy Peaking Plant
Detailed Calculations for Maximum Hourly, Daily and Annual Criteria Pollutant Emissions

Phase I Annual Operating Hours (each):		3917					NOx		SO2		CO			POC	PM10
		Base Load		Startup		Maximum	Ann. Avg.	Startup		Maximum	Ann. Avg.	Startup	Maximum	Startup	
	max. hour	hrs/day	hrs/yr	hrs/day	hrs/yr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Phase I, Each Turbine	1	24	3917	0	0	8.40	8.40	8.40	0.33	6.13	6.13	6.1	1.17	1.17	2.5

		NOx			SO2			CO			POC			PM10	
	Max	Max	Total	Max	Max	Total	Max	Max	Total	Max	Max	Total	Max	Max	Total
	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy
Phase I, Each Turbine	8.4	201.6	16.5	0.33	7.9	0.6	6.13	147.1	12.0	1.2	28.1	2.3	2.5	60.0	4.9
Phase I Total, 3 Turbines	25.2	604.8	39.5	1.0	23.8	1.9	18.4	441.4	36.0	3.5	84.2	6.9	7.5	180.0	14.7

Calpine Gilroy Peaking Plant
Calculation of Noncriteria Pollutant Emissions from Gas Turbines

Compound (1)	Emission Factor, lb/MMscf (2)	Maximum Hourly Emissions, lb/hr		Total Annual Emissions, 3 turbines	
		Each turbine (3)	Total, three turbines	lb/yr	tpy
Ammonia	(5)	6.22	18.66	73,085.0	36.5
Propylene	7.70E-01	0.35	1.06	4,139.5	2.1
Hazardous Air Pollutants					
Acetaldehyde	6.86E-02	0.03	0.09	368.8	0.2
Acrolein	1.89E-02	0.01	0.03	101.6	0.1
Benzene	1.36E-02	0.01	0.02	73.1	0.0
1,3-Butadiene	1.27E-04	5.81E-05	1.74E-04	0.7	0.0
Ethylbenzene	1.79E-02	0.01	0.02	96.2	0.0
Formaldehyde	1.10E-01	0.05	0.15	591.4	0.3
Hexane	2.59E-01	0.12	0.36	1,392.4	0.7
Naphthalene	1.66E-03	7.60E-04	2.28E-03	8.9	0.0
PAHs (6)	6.60E-04	3.02E-04	9.06E-04	3.5	0.0
Propylene oxide	4.78E-02	0.02	0.07	257.0	0.1
Toluene	7.10E-02	0.03	0.10	381.7	0.2
Xylene	2.61E-02	0.01	0.04	140.3	0.1
Total HAPs			0.87	3,415.6	1.71

Notes:

(1) Provided by BAAQMD from Ventura County APCD and CATEF databases.
(2) Based on maximum hourly turbine fuel use of 467.6 MMBtu/hr and fuel HHV of 1022 Btu/scf. 0.46 MMscf/hr
(3) Based on annual turbine fuel use limit of 5,494,300 MMBtu/yr per turbine and fuel HHV of 1022 Btu/scf. 5,376 MMscf/yr
(4) Based on 10 ppm ammonia slip from SCR system.
(5) Polycyclic aromatic hydrocarbons, excluding naphthalene (treated separately).

Appendix C

Screening Modeling Analysis

The SCREEN3 model was used with full meteorology and rural dispersion to evaluate maximum ground-level concentrations of pollutants from each of the five turbine operating cases. The SCR section of each gas turbine was modeled as a 45-foot tall structure with a length of 30 feet and a width of 26 feet (see attached drawings). The plot plan was used to estimate that the fenceline would be approximately 24 meters away at its nearest point, and automated receptors were used to a distance of 2000 meters.

A single turbine was modeled, with an emission rate of 1.0 g/s, for each operating case. The maximum modeled one-hour impact for each case was multiplied by the appropriate emission rate and persistence factor[1] to determine impacts for each pollutant and averaging period. The impact for three turbines was taken to be three times the impact of a single turbine.

Stack parameters and emission rates used for the screening modeling analysis are shown in the following tables.

---

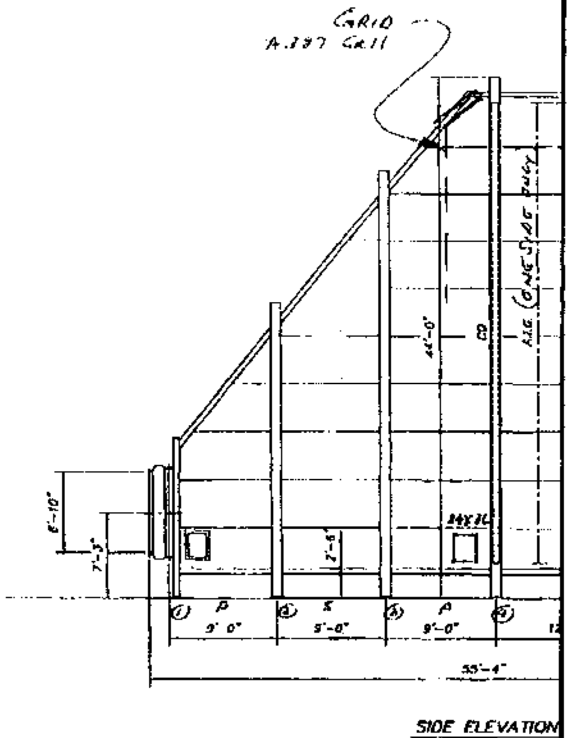
[1] Standard EPA persistence factors of 0.9, 0.7, 0.4 and 0.08 were used to convert the modeled one-hour average to 3-, 8- and 24-hour and annual averages, respectively.

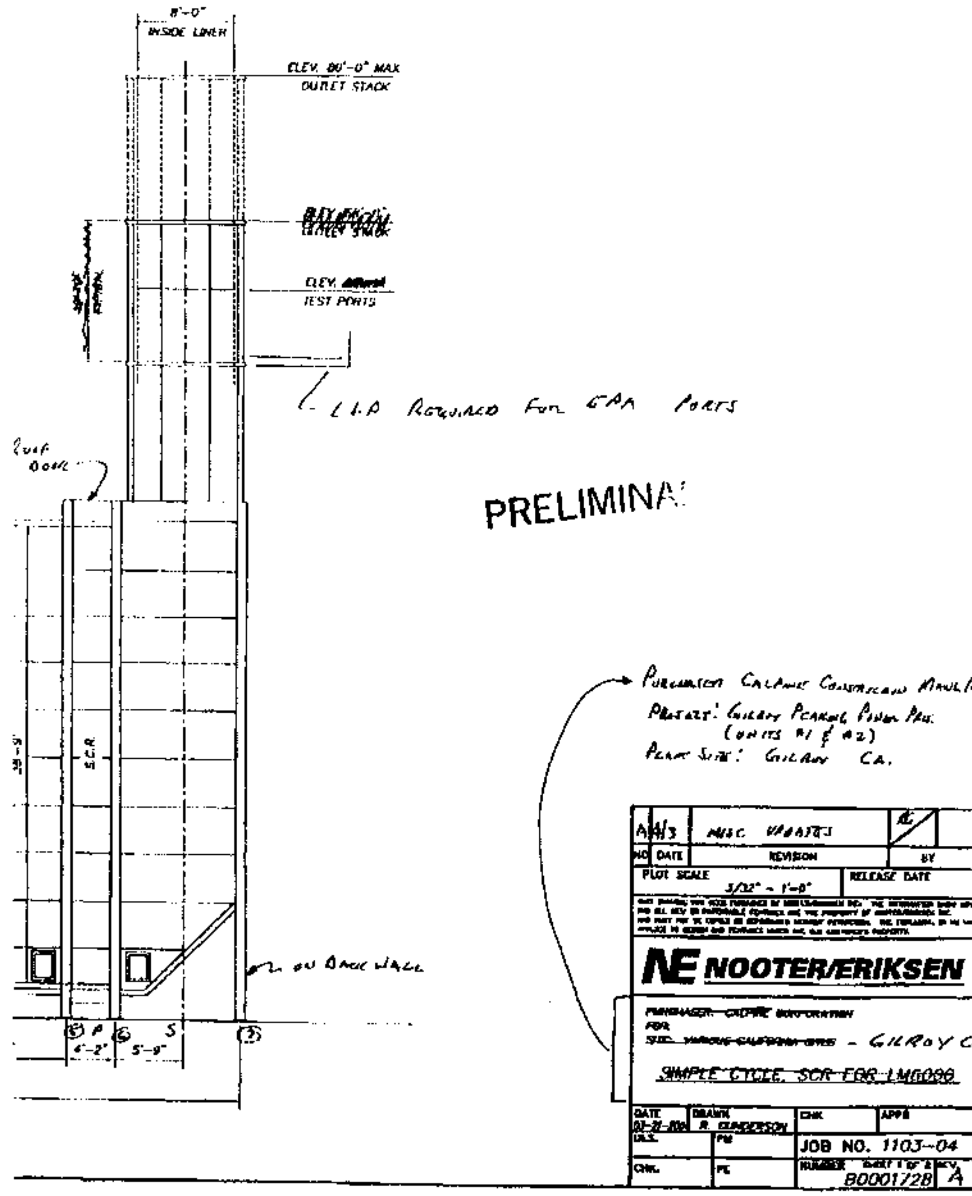
Sub-Job Number	Description
013260	General Project Number, Includes GA's, Foundation Loads and Casing and Liner
013261	Inlet Duct with Grid (Seating Lrlead Liner)
013262	Casing
013262	CO System
013264	SCR System
013265	Expansion Joints (Inlet [illegible]
013266	Exhaust Stack
013267	Ladders & Platforms
013268	Piping - SCR Horz. Header
013269	Fans
013270	Field Service

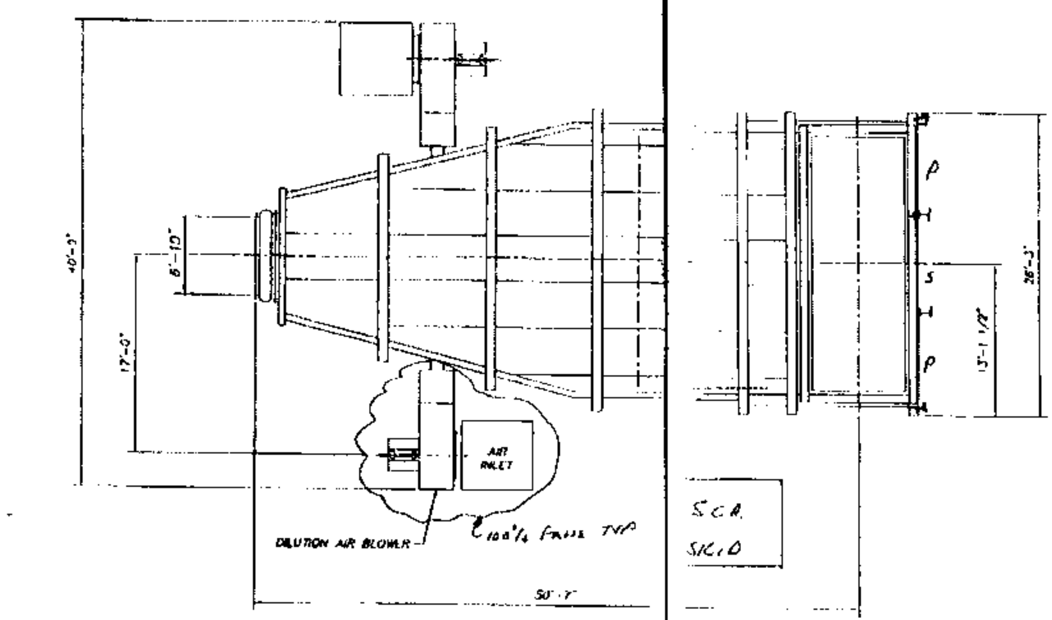
(CO'd open grid)

New!
1. SCR + CO Test Connections
2. Reaction Beam Sizes
C.L. 1,2,3 W14
C.L. 4,5,6 W24
3. Teflon Slide Pads

Cachelle
409SS Liners
SS Mesh on Inlet
Ceramic Fiber







PLAN VIEW

DIMENSIONS SHOWN ON THIS PROPOSAL ARE APPROXIMATE AND SUBJECT TO CHANGE

NO.	DATE	REVISION	BY

PLOT SCALE 3/32" = 1'-0" RELEASE DATE

NE NOOTER/ERIKSEN

PURCHASER: CALPINE CORPORATION
FOR:
SITE: VARIOUS CALIFORNIA SITES

SIMPLE CYCLE SCR FOR LM6000

DATE	DRAWN	CHK	APPR
03-21-2001	R. GUNDERSON		
DES.	PM	JOB NO. 1103-04	
CHK.	PE	NUMBER 80001728	SHEET 1 OF 1 REV.

Emissions and Stack Parameters for Screening Modeling
Calpine Gilroy Peaking Plant

Turbine Case	Ambient Temp	Ambient Temp (deg K)	Stack Diam (m)	Stack Height (m)	Exhaust Temp (deg K)	Exhaust Velocity (m/s)
1	33.8	274.00	4.350	24.384	713.556	18.790
2	59.9	288.50	4.350	24.384	726.889	18.889
3	59.9	288.50	4.350	24.384	729.667	18.541
4	97.7	309.50	4.350	24.384	740.222	16.063
5	97.7	309.50	4.350	24.384	726.889	18.867

Note: Parameters are for each turbine.

Results of the Turbine Screening Analysis
Calpine Gilroy Peaking Plant

Turbine Case	Max. 1-hr Impact, ug/m3 per g/s
1	8.63
2	8.669
3	8.923
4	11.8
5	8.953

Emission Rates for Screening Modeling (lb/hr)										
Turbine	NOx		SO2				CO		PM10	
Case	1-hr	annual avg	1-hr	3-hr	24-hr	annual avg	1-hr	8-hr	24-hr	annual avg
1	8.4	3.01	0.33	0.33	0.33	0.148	6.13	6.13	2.50	0.148
2	8.35	3.01	0.3	0.3	0.3	0.148	6.1	6.10	2.50	0.148
3	8.17	3.01	0.29	0.29	0.29	0.148	5.97	5.99	2.50	0.148
4	6.63	3.01	0.24	0.24	0.24	0.148	4.84	5.00	2.50	0.148
5	8.36	3.01	0.3	0.3	0.3	0.148	6.11	6.11	2.50	0.148

Turbine Emission Rates for Screening Modeling (g/s)										
Turbine	NOx		SO2				CO		PM10	
Case	1-hr	annual avg	1-hr	3-hr	24-hr	annual avg	1-hr	8-hr	24-hr	annual avg
1	1.058	0.379	0.042	0.042	0.042	0.019	0.772	0.772	0.315	0.019
2	1.052	0.379	0.038	0.038	0.038	0.019	0.769	0.769	0.315	0.019
3	1.029	0.379	0.037	0.037	0.037	0.019	0.752	0.755	0.315	0.019
4	0.835	0.379	0.030	0.030	0.030	0.019	0.610	0.630	0.315	0.019
5	1.053	0.379	0.038	0.038	0.038	0.019	0.770	0.770	0.315	0.019

Turbine Case	Load/ Ambient Temp	Modeled Impacts, ug/m3, by Pollutant and Averaging Period									
		NOx		SO2				CO		PM10	
		1-hr	Annual	1-hr	3-hr	24-hr	Annual	1-hr	8-hr	24-hr	Annual
1	100/106F	9.13	0.262	0.359	0.323	0.144	0.013	6.67	4.67	1.09	0.013
2	100/56.6F	9.12	0.263	0.328	0.295	0.131	0.013	6.66	4.67	1.09	0.013
3	100/15F	9.19	0.270	0.331	0.298	0.132	0.013	6.71	4.71	1.12	0.013
4	75/106F	9.86	0.358	0.357	0.321	0.143	0.018	7.20	5.21	1.49	0.018
5	75/56.6F	9.43	0.271	0.338	0.305	0.135	0.013	6.89	4.83	1.13	0.013
Max. Modeled Impact, 3 turbines		29.6	1.1	1.1	1.0	0.4	0.05	21.6	15.6	4.5	0.05

04/05/01
14:09:25

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Calpine Gilroy Case 2

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	1.00000
STACK HEIGHT (M)	=	24.3840
STK INSIDE DIAM (M)	=	4.3500
STK EXIT VELOCITY (M/S)	=	18.8890
STK GAS EXIT TEMP (K)	=	726.8890
AMBIENT AIR TEMP (K)	=	288.5000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	13.7000
MIN HORIZ BLDG DIM (M)	=	7.9200
MAX HORIZ BLDG DIM (M)	=	9.1400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 528.467 M**4/S**3; MOM. FLUX = 669.906 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
24.	.0000	1	1.0	1.1	1590.5	1589.46	29.83	29.12	NO
100.	7.909	4	20.0	22.9	6400.0	30.71	8.91	13.20	HS
200.	4.946	4	20.0	22.9	6400.0	37.87	16.52	17.82	HS
300.	3.239	4	20.0	22.9	6400.0	43.88	23.74	21.18	HS
400.	2.423	4	20.0	22.9	6400.0	49.24	30.73	24.40	HS
500.	1.938	4	20.0	22.9	6400.0	54.17	37.55	27.50	HS
600.	1.613	4	20.0	22.9	6400.0	58.78	44.24	30.51	HS
700.	1.379	4	20.0	22.9	6400.0	63.13	50.81	33.44	HS
800.	1.033	4	20.0	22.9	6400.0	67.29	57.29	34.29	HS
900.	.9085	4	20.0	22.9	6400.0	71.27	63.69	36.77	HS
1000.	.7998	4	20.0	22.9	6400.0	75.11	70.02	39.03	HS
1100.	.7117	4	20.0	22.9	6400.0	78.82	76.28	41.22	HS
1200.	.7011	1	2.0	2.1	807.9	806.92	313.84	695.78	NO
1300.	.6845	1	2.0	2.1	807.9	806.92	334.52	817.43	NO
1400.	.6522	1	2.0	2.1	807.9	806.92	354.91	950.31	NO
1500.	.6223	1	2.0	2.1	807.9	806.92	372.67	1093.70	NO
1600.	.5998	1	2.0	2.1	807.9	806.92	386.71	1247.50	NO
1700.	.5786	1	2.0	2.1	807.9	806.92	400.88	1413.14	NO
1800.	.5587	1	2.0	2.1	807.9	806.92	415.17	1590.58	NO
1900.	.5400	1	2.0	2.1	807.9	806.92	429.56	1779.82	NO
2000.	.5224	1	2.0	2.1	807.9	806.92	444.02	1980.87	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 24. M:

121.	8.669	4	20.0	22.9	6400.0	32.44	10.63	15.08	HS

```
DWASH=   MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****************************************
    *** REGULATORY (Default) ***
   PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
        (BRODE, 1988)
****************************************


*** CAVITY CALCULATION - 1 ***        *** CAVITY CALCULATION - 2 ***
 CONC (UG/M**3)       =    545.7       CONC (UG/M**3)       =    614.4
 CRIT WS @10M (M/S) =    16.33         CRIT WS @10M (M/S) =    17.81
 CRIT WS @ HS (M/S) =    19.51         CRIT WS @ HS (M/S) =    21.29
 DILUTION WS (M/S)  =     9.76         DILUTION WS (M/S)  =    10.00
 CAVITY HT (M)       =    24.04        CAVITY HT (M)       =    22.91
 CAVITY LENGTH (M)  =    19.50         CAVITY LENGTH (M)  =    15.87
 ALONGWIND DIM (M)  =     7.92         ALONGWIND DIM (M)  =     9.14

****************************************
     END OF CAVITY CALCULATIONS
****************************************


*** INVERSION BREAK-UP FUMIGATION CALC. ***
 CONC (UG/M**3)     =     1.026
 DIST TO MAX (M)   = 18624.15

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION          MAX CONC      DIST TO    TERRAIN
  PROCEDURE           (UG/M**3)     MAX (M)     HT (M)
--------------      -----------    -------    -------
SIMPLE TERRAIN        8.669          121.         0.

BLDG. CAVITY-1        545.7           20.        --   (DIST = CAVITY LENGTH)

BLDG. CAVITY-2        614.4           16.        --   (DIST = CAVITY LENGTH)


INV BREAKUP FUMI      1.026        18624.        --

***************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
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04/05/01
14:04:42

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Calpine Gilroy Case 1

```
SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      1.00000
   STACK HEIGHT (M)       =      24.3840
   STK INSIDE DIAM (M)    =       4.3500
   STK EXIT VELOCITY (M/S)=      18.7900
   STK GAS EXIT TEMP (K)  =     713.5560
   AMBIENT AIR TEMP (K)   =     274.0000
   RECEPTOR HEIGHT (M)    =        .0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =      13.7000
   MIN HORIZ BLDG DIM (M) =       7.9200
   MAX HORIZ BLDG DIM (M) =       9.1400
```

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 536.946 M**4/S**3; MOM. FLUX = 641.349 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
24.	.0000	1	1.0	1.1	1605.5	1604.48	29.98	29.27	NO
100.	7.877	4	20.0	22.9	6400.0	30.74	8.92	13.21	HS
200.	4.913	4	20.0	22.9	6400.0	37.94	16.53	17.83	HS
300.	3.213	4	20.0	22.9	6400.0	43.98	23.76	21.20	HS
400.	2.402	4	20.0	22.9	6400.0	49.37	30.75	24.42	HS
500.	1.921	4	20.0	22.9	6400.0	54.32	37.57	27.52	HS
600.	1.598	4	20.0	22.9	6400.0	58.95	44.25	30.53	HS
700.	1.365	4	20.0	22.9	6400.0	63.33	50.83	33.46	HS
800.	1.023	4	20.0	22.9	6400.0	67.51	57.31	34.32	HS
900.	.8989	4	20.0	22.9	6400.0	71.51	63.71	36.80	HS
1000.	.7912	4	20.0	22.9	6400.0	75.37	70.04	39.06	HS
1100.	.7039	4	20.0	22.9	6400.0	79.10	76.30	41.26	HS
1200.	.6907	1	2.0	2.1	815.4	814.43	314.49	696.07	NO
1300.	.6760	1	2.0	2.1	815.4	814.43	335.20	817.70	NO
1400.	.6447	1	2.0	2.1	815.4	814.43	355.62	950.58	NO
1500.	.6144	1	2.0	2.1	815.4	814.43	373.96	1094.14	NO
1600.	.5924	1	2.0	2.1	815.4	814.43	387.95	1247.89	NO
1700.	.5716	1	2.0	2.1	815.4	814.43	402.08	1413.48	NO
1800.	.5520	1	2.0	2.1	815.4	814.43	416.33	1590.88	NO
1900.	.5336	1	2.0	2.1	815.4	814.43	430.68	1780.09	NO
2000.	.5163	1	2.0	2.1	815.4	814.43	445.10	1981.12	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 24. M:

121.	8.630	4	20.0	22.9	6400.0	32.48	10.64	15.09	HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED

```
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BRODE, 1988)
****************************************


 *** CAVITY CALCULATION - 1 ***        *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)       =    548.2        CONC (UG/M**3)        =    614.4
  CRIT WS @10M (M/S) =    16.25        CRIT WS @10M (M/S) =    17.74
  CRIT WS @ HS (M/S) =    19.42        CRIT WS @ HS (M/S) =    21.20
  DILUTION WS (M/S)  =     9.71        DILUTION WS (M/S)  =    10.00
  CAVITY HT (M)      =    24.04        CAVITY HT (M)      =    22.91
  CAVITY LENGTH (M)  =    19.50        CAVITY LENGTH (M)  =    15.87
  ALONGWIND DIM (M)  =     7.92        ALONGWIND DIM (M)  =     9.14

****************************************
      END OF CAVITY CALCULATIONS
****************************************


 *** INVERSION BREAK-UP FUMIGATION CALC. ***
  CONC (UG/M**3)    =     1.053
  DIST TO MAX (M)   = 18283.66

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       8.630        121.        0.

BLDG. CAVITY-1       548.2         20.       --   (DIST = CAVITY LENGTH)

BLDG. CAVITY-2       614.4         16.       --   (DIST = CAVITY LENGTH)


INV BREAKUP FUMI     1.053       18284.      --

***************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
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04/05/01
14:02:08

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Calpine Gilroy Case 3

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	1.00000
STACK HEIGHT (M)	=	24.3840
STK INSIDE DIAM (M)	=	4.3500
STK EXIT VELOCITY (M/S)	=	18.5410
STK GAS EXIT TEMP (K)	=	729.6670
AMBIENT AIR TEMP (K)	=	288.5000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	13.7000
MIN HORIZ BLDG DIM (M)	=	7.9200
MAX HORIZ BLDG DIM (M)	=	9.1400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 520.031 M**4/S**3; MOM. FLUX = 642.993 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
24.	.0000	1	1.0	1.1	1575.4	1574.43	29.68	28.96	NO
100.	8.182	4	20.0	22.9	6400.0	30.52	8.90	13.20	HS
200.	5.081	4	20.0	22.9	6400.0	37.64	16.51	17.81	HS
300.	3.320	4	20.0	22.9	6400.0	43.61	23.73	21.17	HS
400.	2.479	4	20.0	22.9	6400.0	48.94	30.72	24.38	HS
500.	1.980	4	20.0	22.9	6400.0	53.84	37.54	27.48	HS
600.	1.646	4	20.0	22.9	6400.0	58.43	44.22	30.49	HS
700.	1.405	4	20.0	22.9	6400.0	62.76	50.80	33.41	HS
800.	1.055	4	20.0	22.9	6400.0	66.89	57.27	34.26	HS
900.	.9265	4	20.0	22.9	6400.0	70.85	63.67	36.73	HS
1000.	.8153	4	20.0	22.9	6400.0	74.67	70.00	38.99	HS
1100.	.7252	4	20.0	22.9	6400.0	78.36	76.26	41.18	HS
1200.	.7116	1	2.0	2.1	800.4	799.40	313.18	695.49	NO
1300.	.6932	1	2.0	2.1	800.4	799.40	333.84	817.15	NO
1400.	.6598	1	2.0	2.1	800.4	799.40	354.20	950.05	NO
1500.	.6303	1	2.0	2.1	800.4	799.40	371.39	1093.26	NO
1600.	.6074	1	2.0	2.1	800.4	799.40	385.47	1247.12	NO
1700.	.5858	1	2.0	2.1	800.4	799.40	399.69	1412.80	NO
1800.	.5655	1	2.0	2.1	800.4	799.40	414.02	1590.28	NO
1900.	.5465	1	2.0	2.1	800.4	799.40	428.44	1779.55	NO
2000.	.5299	4	20.0	22.9	6400.0	90.56	129.59	56.75	HS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 24. M:

121.	8.923	4	20.0	22.9	6400.0	32.23	10.62	15.07	HS

```
 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
         (BRODE, 1988)
****************************************


 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)       =    555.8      CONC (UG/M**3)       =    614.4
  CRIT WS @10M (M/S) =    16.03      CRIT WS @10M (M/S) =    17.44
  CRIT WS @ HS (M/S) =    19.16      CRIT WS @ HS (M/S) =    20.84
  DILUTION WS (M/S)  =     9.58      DILUTION WS (M/S)  =    10.00
  CAVITY HT (M)      =    24.04      CAVITY HT (M)      =    22.91
  CAVITY LENGTH (M)  =    19.50      CAVITY LENGTH (M)  =    15.87
  ALONGWIND DIM (M)  =     7.92      ALONGWIND DIM (M)  =     9.14

****************************************
      END OF CAVITY CALCULATIONS
****************************************


 *** INVERSION BREAK-UP FUMIGATION CALC. ***
  CONC (UG/M**3)    =     1.038
  DIST TO MAX (M)   = 18469.58

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION          MAX CONC     DIST TO   TERRAIN
  PROCEDURE          (UG/M**3)     MAX (M)    HT (M)
--------------      -----------    -------   -------
SIMPLE TERRAIN        8.923          121.        0.

BLDG. CAVITY-1        555.8           20.        --   (DIST = CAVITY LENGTH)

BLDG. CAVITY-2        614.4           16.        --   (DIST = CAVITY LENGTH)


INV BREAKUP FUMI      1.038        18470.       --

***************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
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04/05/01
14:11:20

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Calpine Gilroy Case 4

```
SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =        POINT
   EMISSION RATE (G/S)      =      1.00000
   STACK HEIGHT (M)         =      24.3840
   STK INSIDE DIAM (M)      =       4.3500
   STK EXIT VELOCITY (M/S)=        16.0630
   STK GAS EXIT TEMP (K)    =     740.2220
   AMBIENT AIR TEMP (K)     =     309.5000
   RECEPTOR HEIGHT (M)      =        .0000
   URBAN/RURAL OPTION       =        RURAL
   BUILDING HEIGHT (M)      =      13.7000
   MIN HORIZ BLDG DIM (M) =         7.9200
   MAX HORIZ BLDG DIM (M) =         9.1400
```

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 433.590 M**4/S**3; MOM. FLUX = 510.353 M**4/S**2.

*** FULL METEOROLOGY ***

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**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************
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*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
24.	.0000	1	1.0	1.1	1415.3	1414.25	28.05	27.29	NO
100.	10.78	4	20.0	22.9	6400.0	28.86	8.83	13.15	HS
200.	6.390	4	20.0	22.9	6400.0	35.56	16.40	17.72	HS
300.	4.121	4	20.0	22.9	6400.0	41.19	23.61	21.03	HS
400.	3.042	4	20.0	22.9	6400.0	46.20	30.58	24.20	HS
500.	2.406	4	20.0	22.9	6400.0	50.82	37.38	27.27	HS
600.	1.984	4	20.0	22.9	6400.0	55.13	44.05	30.24	HS
700.	1.682	4	20.0	22.9	6400.0	59.21	50.61	33.13	HS
800.	1.276	4	20.0	22.9	6400.0	63.10	57.08	33.94	HS
900.	1.116	4	20.0	22.9	6400.0	66.83	63.47	36.38	HS
1000.	.9794	4	20.0	22.9	6400.0	70.42	69.79	38.61	HS
1100.	.8691	4	20.0	22.9	6400.0	73.89	76.04	40.77	HS
1200.	.8320	1	2.0	2.1	720.3	719.32	306.17	692.36	NO
1300.	.7939	1	2.0	2.1	720.3	719.32	326.52	814.19	NO
1400.	.7565	1	2.0	2.1	720.3	719.32	343.77	946.21	NO
1500.	.7263	1	2.0	2.1	720.3	719.32	358.21	1088.86	NO
1600.	.6979	1	2.0	2.1	720.3	719.32	372.80	1243.26	NO
1700.	.6760	4	20.0	22.9	6400.0	82.16	111.94	51.47	HS
1800.	.6711	4	20.0	22.9	6400.0	82.16	117.75	53.01	HS
1900.	.6642	4	20.0	22.9	6400.0	82.16	123.52	54.52	HS
2000.	.6558	4	20.0	22.9	6400.0	82.16	129.27	56.01	HS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 24. M:

37.	11.80	4	20.0	22.9	6400.0	23.43	3.75	8.75	HS

```
 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BRODE, 1988)
****************************************


 *** CAVITY CALCULATION - 1 ***        *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)       =    638.6       CONC (UG/M**3)        =    679.2
  CRIT WS @10M (M/S) =    13.95       CRIT WS @10M (M/S) =    15.14
  CRIT WS @ HS (M/S) =    16.67       CRIT WS @ HS (M/S) =    18.09
  DILUTION WS (M/S)  =     8.34       DILUTION WS (M/S)  =     9.05
  CAVITY HT (M)      =    24.04       CAVITY HT (M)      =    22.91
  CAVITY LENGTH (M)  =    19.50       CAVITY LENGTH (M)  =    15.87
  ALONGWIND DIM (M)  =     7.92       ALONGWIND DIM (M)  =     9.14

****************************************
      END OF CAVITY CALCULATIONS
****************************************


 *** INVERSION BREAK-UP FUMIGATION CALC. ***
  CONC (UG/M**3)    =    1.123
  DIST TO MAX (M)   = 17437.12

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION          MAX CONC     DIST TO   TERRAIN
  PROCEDURE           (UG/M**3)    MAX (M)    HT (M)
--------------      -----------   -------   -------
SIMPLE TERRAIN        11.80           37.        0.

BLDG. CAVITY-1        638.6           20.       --   (DIST = CAVITY LENGTH)

BLDG. CAVITY-2        679.2           16.       --   (DIST = CAVITY LENGTH)


INV BREAKUP FUMI      1.123        17437.       --


***************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
```

04/05/01
14:13:22

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

Calpine Gilroy Case 5

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      1.00000
   STACK HEIGHT (M)       =      24.3840
   STK INSIDE DIAM (M)    =       4.3500
   STK EXIT VELOCITY (M/S)=      18.8670
   STK GAS EXIT TEMP (K)  =     726.8890
   AMBIENT AIR TEMP (K)   =     309.5000
   RECEPTOR HEIGHT (M)    =        .0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =      13.7000
   MIN HORIZ BLDG DIM (M) =       7.9200
   MAX HORIZ BLDG DIM (M) =       9.1400

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =  502.566 M**4/S**3;  MOM. FLUX =  716.996 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES
***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
24.	.0000	1	1.0	1.1	1544.0	1542.98	29.36	28.64	NO
100.	8.187	4	20.0	22.9	6400.0	30.50	8.89	13.19	HS
200.	5.125	4	20.0	22.9	6400.0	37.54	16.49	17.79	HS
300.	3.362	4	20.0	22.9	6400.0	43.45	23.71	21.14	HS
400.	2.516	4	20.0	22.9	6400.0	48.72	30.69	24.35	HS
500.	2.013	4	20.0	22.9	6400.0	53.57	37.51	27.44	HS
600.	1.675	4	20.0	22.9	6400.0	58.10	44.19	30.44	HS
700.	1.431	4	20.0	22.9	6400.0	62.38	50.76	33.36	HS
800.	1.076	4	20.0	22.9	6400.0	66.47	57.24	34.19	HS
900.	.9454	4	20.0	22.9	6400.0	70.38	63.63	36.66	HS
1000.	.8323	4	20.0	22.9	6400.0	74.16	69.96	38.92	HS
1100.	.7407	4	20.0	22.9	6400.0	77.81	76.22	41.10	HS
1200.	.7340	1	2.0	2.1	784.7	783.68	311.81	694.87	NO
1300.	.7116	1	2.0	2.1	784.7	783.68	332.41	816.56	NO
1400.	.6761	1	2.0	2.1	784.7	783.68	352.71	949.49	NO
1500.	.6476	1	2.0	2.1	784.7	783.68	368.73	1092.36	NO
1600.	.6237	1	2.0	2.1	784.7	783.68	382.91	1246.33	NO
1700.	.6013	1	2.0	2.1	784.7	783.68	397.22	1412.11	NO
1800.	.5802	1	2.0	2.1	784.7	783.68	411.63	1589.66	NO
1900.	.5605	1	2.0	2.1	784.7	783.68	426.14	1779.00	NO
2000.	.5483	4	20.0	22.9	6400.0	89.22	129.53	56.60	HS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND   24. M:

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
121.	8.953	4	20.0	22.9	6400.0	32.20	10.61	15.06	HS

```
 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BRODE, 1988)
****************************************


 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    545.7       CONC (UG/M**3)      =    614.4
  CRIT WS @10M (M/S) =    16.33       CRIT WS @10M (M/S) =    17.81
  CRIT WS @ HS (M/S) =    19.51       CRIT WS @ HS (M/S) =    21.29
  DILUTION WS (M/S)  =     9.76       DILUTION WS (M/S)  =    10.00
  CAVITY HT (M)      =    24.04       CAVITY HT (M)      =    22.91
  CAVITY LENGTH (M)  =    19.50       CAVITY LENGTH (M)  =    15.87
  ALONGWIND DIM (M)  =     7.92       ALONGWIND DIM (M)  =     9.14

****************************************
      END OF CAVITY CALCULATIONS
****************************************


 *** INVERSION BREAK-UP FUMIGATION CALC. ***
  CONC (UG/M**3)    =    1.012
  DIST TO MAX (M)   = 18818.38

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION         MAX CONC     DIST TO   TERRAIN
  PROCEDURE          (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       8.953          121.        0.

BLDG. CAVITY-1       545.7           20.       --  (DIST = CAVITY LENGTH)

BLDG. CAVITY-2       614.4           16.       --  (DIST = CAVITY LENGTH)


INV BREAKUP FUMI     1.012        18818.       --


***************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
```

Appendix D

Screening Health Risk Assessment

The unit impact modeling results from the screening analysis discussed in Appendix C were used to evaluate the maximum modeled impacts of toxic air contaminants from the proposed project. The ARB's HRA model was used to assess potential carcinogenic risks. The evaluation of maximum modeled impacts and the HRA model output are included in this appendix.

Calpine Gilroy Peaking Plant
Calculation of Maximum Impacts of Hazardous Air Pollutants

Turbine Case	Max. 1-hr Impact, ug/m3 per g/s	Heat Input, MMBtu/hr	Product
1	8.63	467.6	4035.388
2	8.669	460.1	3988.6069
3	8.923	449.8	4013.5654
4	11.8	364.8	4304.64
5	8.953	460	4119.2753

As emissions of HAPs are directly related to heat input, operating case with highest product of heat input and unit impact will have highest HAP impacts. Thus Case 4 will be worst case for toxics impacts.

Compound (1)	Emission Rates for Modeling, g/s (3 turbines, annual average basis)	Modeled Impacts, ug/m3, (3 turbines, ann avg basis)
Ammonia	1.051	0.992
Propylene	5.954E-02	5.62E-02
Acetaldehyde	5.305E-03	5.01E-03
Acrolein	1.461E-03	1.38E-03
Benzene	1.052E-03	9.93E-04
1,3-Butadiene	9.820E-06	9.27E-06
Ethylbenzene	1.384E-03	1.31E-03
Formaldehyde	8.506E-03	8.03E-03
Hexane	2.003E-02	1.89E-02
Naphthalene	1.284E-04	1.21E-04
PAHs (4)	5.104E-05	4.82E-05
Propylene oxide	3.696E-03	3.49E-03
Toluene	5.490E-03	5.18E-03
Xylene	2.018E-03	1.91E-03

Notes:
(1) Provided by BAAQMD from Ventura County APCD and CATEF databases.
(2) Based on annual turbine fuel use limit of 5,494,300 MMBtu/yr and fuel HHV of 1022 Btu/scf. 5,376 MMscf/yr
(3) Based on 10 ppm ammonia slip from SCR system.
(4) Polycyclic aromatic hydrocarbons, excluding naphthalene (treated separately).

California Air Resources Board

And

Office of Environmental Health Hazard Assessment

Health Risk Assessment Program

Version 2.0e

INDIVIDUAL CANCER RISK REPORT

Run Made By

Nancy Matthews

Sierra Research

Project : Calpine Gilroy Peakers

Apr. 18, 2001

Pollutant Database Date : Oct. 5, 2000
Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: ANNAVG.E96

Pollutant Name	Emission Rate (g/s)
1,3-BUTADIENE	9.270E-06
ACETALDEHYDE	5.010E-03
ACROLEIN	1.380E-03
AMMONIA	9.920E-01
BENZENE	9.930E-04
ETHYL BENZENE	1.310E-03
FORMALDEHYDE	8.030E-03
N-HEXANE	1.890E-02
NAPHTHALENE	1.210E-04
PAH:BENZO(A)PYRENE	4.820E-05
PROPYLENE (PROPENE)	5.620E-02
PROPYLENE OXIDE	3.490E-03
TOLUENE	5.180E-03
XYLENES	1.910E-03

EXPOSURE ROUTE INFORMATION

File: EXPOSURE.I96

```
Deposition Velocity (m/s) .....:  0.020

Fraction of Homegrown Produce .:  0.000

Dilution Factor for Farm/Ranch X/Q (ug/m3)/(g/s) ....:   0.0000
Fraction of Animals' Diet From Grazing ..............:   0.0000
Fraction of Animals' Diet From Impacted Feed ........:   0.0000

Fraction of Animals' Water Impacted by Deposition ...:   0.0000

  Surface Area (m2) ....:  0.000E+00
  Volume (liters) ......:  0.000E+00
  Volume Changes .......:  0.000E+00


Fraction of Meat in Diet Impacted ..: 0.0000

  Beef ................: 0.0000
  Pork ................: 0.0000
  Lamb/Goat ...........: 0.0000
  Chicken .............: 0.0000

Fraction of Milk in Diet Impacted ..: 0.0000

  Goat Milk Fraction ..: 0.0000

Fraction of Eggs in Diet Impacted ..: 0.0000


Fraction of Impacted Drinking Water : 0.0000

  X/Q at water source ..:     0.0000
  Surface Area (m2) ....:  0.000E+00
  Volume (liters) ......:  0.000E+00
  Volume changes .......:  0.000E+00


Fraction of Fish from Impacted Water: 0.0000

  X/Q at Fish Source ...:     0.0000
  Surface Area (m2) ....:  0.000E+00
  Volume (liters) ......:  0.000E+00
  Volume changes .......:  0.000E+00
```

---

44 YEAR
INDIVIDUAL CANCER RISK BY POLLUTANT AND ROUTE

Pollutant	Air	Soil	Skin	Garden	MMilk	Other
1,3-BUTADIENE	9.91E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ACETALDEHYDE	8.50E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BENZENE	1.81E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FORMALDEHYDE	3.03E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAH:BENZO(A)PYR	3.33E-08	5.13E-08	3.26E-08	0.00E+00	1.31E-07	0.00E+00
PROPYLENE OXIDE	8.12E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Route Total	9.93E-08	5.13E-08	3.26E-08	0.00E+00	1.31E-07	0.00E+00

TOTAL RISK: 3.15E-07

70 YEAR
INDIVIDUAL CANCER RISK BY POLLUTANT AND ROUTE

Pollutant	Air	Soil	Skin	Garden	MMilk	Other
1,3-BUTADIENE	1.58E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ACETALDEHYDE	1.35E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BENZENE	2.88E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FORMALDEHYDE	4.82E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAH:BENZO(A)PYR	5.30E-08	7.94E-08	5.04E-08	0.00E+00	0.00E+00	0.00E+00
PROPYLENE OXIDE	1.29E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Route Total	1.58E-07	7.94E-08	5.04E-08	0.00E+00	0.00E+00	0.00E+00

TOTAL RISK: 2.88E-07

E

Appendix E: Request For Fire District Ability-To-Serve Letter

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CALPINE

GILROY COGEN.
P.O. BOX 1764
GILROY, CALIFORNIA 95021
408.847.5329
408.847.1088 (FAX)

March 23, 2001

Ms. Jacqueline Bretschneider
Fire Marshall
City of Gilroy
7351 Rosanna Street
Gilroy, CA 95020-6197

Dear Ms. Bretschneider:

Calpine Corporation owns and operates a 120 MW power plant in Gilroy. We currently have plans to expand this plant by up to 275 MWs. At this time, we are in the process of preparing an application to the California Energy Commission for two gas turbines with the ability to generate up to approximately 95 MWs. This project will be constructed and begin operating this summer in order to help provide relief to California's current energy crisis.

As part of our permit application to the California Energy Commission, we must include a letter from the City of Gilroy Fire Department indicating the Fire Department's ability to serve the project. The project will comply with the Uniform Fire Code requirements and Calpine will work with the Fire Department during detailed design to ensure that these requirements are met.

I would appreciate it if you could provide Calpine with an ability to serve letter. We intend to submit our application to the California Energy Commission in mid-April.

Thank you for you time and consideration of this issue. If you have any questions, please do not hesitate to contact me at (831) 761-5355. Thank you.

Sincerely,

Bob McCaffrey
Plant Manager

File #816

FILE COPY

GILROY FIRE DEPARTMENT
7070 CHESTNUT STREET
GILROY, CA 95020
(408) 846-0370

April 26, 2001

Mr. Bob McCaffrey
Plant Manager
Gilroy COGEN
P.O. Box 1764
Gilroy, CA 95021

Subject: Ability to Serve Letter

Dear Mr. McCaffrey,

On April 19, 2001, I along with Operations Chief Dave Bozzo and Deputy Fire Marshal Rodger Maggio toured the Gilroy Plant (here-after referred to as "Plant") and reviewed preliminary site plans for it's expansion with Mr. Brian Martin, P.E. and Mr. Andrew Remely of CALPINE.

The Plant is located on Highway 152, just east of Highway 101, within the City limits of Gilroy. The Plant is adjacent to and approximately 60-100 feet from the structure housing Gilroy Foods on the west; open agricultural land on the south; a levee, waterway and open field to the east and a large parking lot and then Highway 152 to the north. The only exposure of significance is Gilroy Foods. The easterly exterior wall of Gilroy Foods is of non-combustible construction (i.e. concrete and steel).

Our tour revealed expected quantities and types of permitted hazardous materials on-site along with normal hazards associated with operating turbines. The primary fuel source is natural gas brought in via underground pipe. On-site fire protection systems and appliances were in order and recent flow tests of on-site water supply indicated adequate pressures and quantities. Automatic fire sprinklers, Halon and other special fire protection systems as well as firefighting appliances were serviceable and well maintained. Fences and gates control plant access. Fire Department access is acceptable. Trained technicians staff the Plant 24 hours by 7 days per week.

The Gilroy Fire Station on Chestnut Street is approximately one mile from the Plant. This fire station houses one fire company of four firefighters on a Type I engine. Gilroy's second fire station is approximately 3 miles from the Plant. This station houses a fire company of four firefighters on a Type I engine, Gilroy has access, through the Santa Clara County Local Mutual Aid Agreement, to additional firefighting, hazardous materials and emergency medical response resources. The nearest of these resources is an additional engine company from the South Santa Clara County Fire District, Masten Station, located approximately 4.5 miles north of the Plant. The Santa Clara County Fire Department provides a Regional Hazardous Materials Response capability available within 45-60 minutes of call out.

After a thorough inspection of the Plant, a review of the proposed expansion and an accounting of the locally available fire, hazardous materials and emergency medical response capabilities the Gilroy Fire Department is confident in its ability to serve the existing as well as proposed Plant.

Should you have any questions or concerns please do not hesitate to contact me at (408) 846-0380 or hholden@ci.gilroy.ca.us.

Sincerely,

Hugh G. Holden

Hugh G. Holden
Fire Chief (Interim)

F

Appendix F: Foster Wheeler Letter to NAHC

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FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 10, 2001

Ms. Debbie Pilas-Treadway
Native American Heritage Commission
915 Capital Mall, Room 364
Sacramento, California 95814

Subject: REQUEST FOR NATIVE AMERICAN REFERRALS AND SACRED LANDS FILE REVIEW FOR THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Pilas-Treadway:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

The Gilroy Project will consist of the installation of six natural-gas-fired simple-cycle turbines adjacent to the existing Gilroy Co-Gen facility. The turbines are 50-megawatt (MW) peaking machines, GE model LM6000.

The Gilroy Project site is shown on the attached map and the legal description is provided below.

Gilroy Project vicinity:

Gilroy 7.5 USGS Quad Map-T10S, R4E, unsectioned
Chittenden 7.5 USGS Quad Map-T10S, R4E, unsectioned

Construction for this facility is planned for the summer of 2001, and we are in the process of preparing our application for the CEC.

We are requesting that you provide us with the names and addresses of potentially affected and interested Native American individuals and organizations to include in a mailing list for notification of the project. Please also notify us if there are any locations that are included in your Sacred Lands Inventory within the project vicinity.

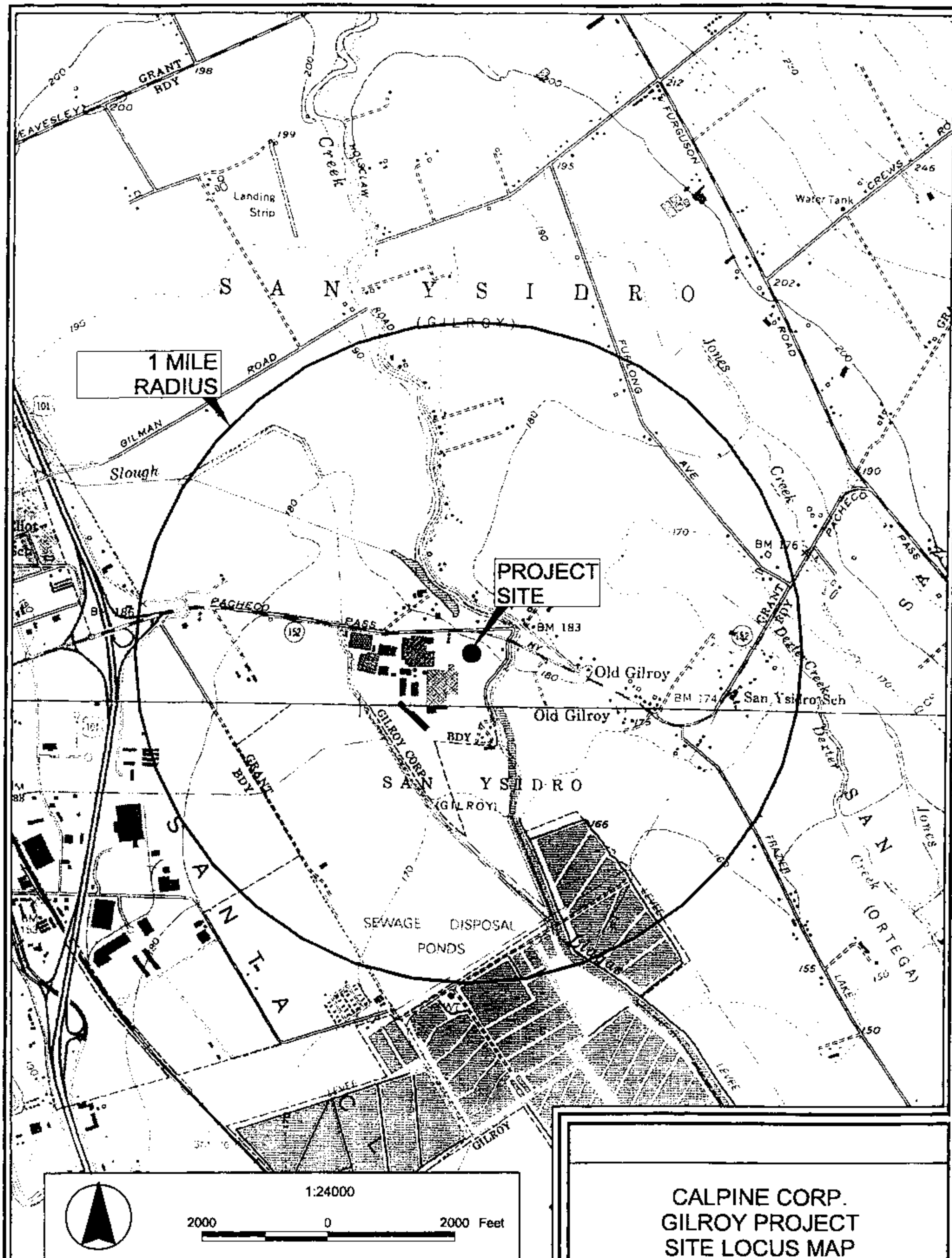
Due to the current critical energy crisis in California, we would like to expedite the cultural resource notification response. Please reference the "Gilroy Project" in your correspondence, and send the information to the FAX number or address at the bottom of this page. You can contact me at (916) 928-0202 if you have any questions. We greatly appreciate your immediate attention to this matter.

Sincerely,

Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine

3947 Lennane Drive, Suite 200, Sacramento, CA 95834-1973
Tel: 916-928-0202 Fax: 916-928-0594



Topographic base includes portions of Gilroy and Gilroy Hot Springs USGS 7.5 Minute Quadrangles.

CALPINE CORP.
GILROY PROJECT
SITE LOCUS MAP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390

April 16, 2001

Jenna Farrell
Foster Wheeler Environmental Corporation
3627 Lennane Drive, Suite 200
Sacramento, CA 95834

RE: Gilroy LM6000 Energy Generation Project - Santa Clara County

Sent By Fax: (916) 928-0594
Pages Sent: 3

Dear Ms. Farrell:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend other with specific knowledge. A minimum of two weeks must be allowed for responses after notification.

If you receive notification of change of addresses and phone numbers from any these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway

Debbie Pilas-Treadway
Associate Governmental Program Analyst

NATIVE AMERICAN CONTACTS
Santa Clara County
April 21, 2001

Marjorie Ann Reid DHL 4869 Englewood Drive San Jose, CA 95129 (408) 253-4202	Ohlone/Coastanoan	Linda G. Yamane DHL 1195 B Rousch Ave Seaside, CA 93955 (831) 394-5915	Ohlone/Costanoan
Ella Rodriguez PO Box 1411 Salinas, CA 93902 (831) 632-0490	Ohlone/Costanoan	Michelle Zimmer DHL 4952 McCoy Avenue San Jose, CA 95130 (408) 364-1391 - Home (408) 364-1393 - Fax ~~(408) 210-8061 - Cell~~	Ohlone/Costanoan
Irene Zwierlein FAX 789 Canada Road Woodside, CA 94062 (650) 851-7747 - Home (650) 851-7489 - Fax (408) 364-1393 - Cell	Ohlone/Costanoan	Thomas P. Soto PO Box 269 Foresthill, CA 95631 (530) 367-4402 (530) 367-5083	Ohlone/Costanoan
Jakki Kehl DHL 461 Beaver Lane yron, CA 94514 25) 516-1670	Ohlone/Costanoan	Amah San Juan Band DHL Charles Higuera 1316 Buena Vista Ave. Pacific Grove, CA 93950 (831) 375-9581 - work (831) 375-5045- home	Ohlone/Costanoan
ierine Erolinda Perez DHL Luna Lane ton, CA 95206 941-1900 work	Ohlone/Costanoan Northern Valley Yokut Bay Miwok	Amah San Juan Band DHL Marion Martinez 26206 Coleman Avenue Hayward, CA 94544 (510) 732-6806 - home comncompy@hotmail.com - email	Ohlone/Costanoan

urrent only as of the date of this document.

of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section e Public Resources Code and Section 5097.98 of the Public Resources Code.

ly applicable for contacting local Native Americans with regards to the cultural assessment for the proposed Area Build Project, Santa Clara County

NATIVE AMERICAN CONTACTS
Santa Clara County
April 21, 2001

Indian Canyon Mutsun Band of Costanoan
ın Marie Sayer, Chairperson
r.O. Box 28 Ohlone/Costanoan
Hollister, C A 95024-0
(510) 637-4238

The Ohlone Indian Tribe
Andrew Galvan FAXed
PO Box 3152 Ohlone/Costanoan
Mission San Jose, C A 94539
(510) 656-0787 - Voice
(510) 882-0527 - Cell
(510) 656-0780 - Fax
chochenyo@AOL.com

Trina Marine Ruano Family
Ramona Garibay, Representative
37974 Canyon Hts. Drive Ohlone/Costanoan
Fremont, C A 94536
(510) 792-1642
(510) 673-5029 - Cell

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

; list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed .iFiber Bay Area Build Project, Santa Clara County

April 17, 2001

The Olone Indian Tribe
Andrew Galvan
PO Box 3152
Mission San Jose, CA 94539

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Mr. Galvan:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

The Gilroy Project will consist of the installation of six natural-gas-fired simple-cycle turbines adjacent to the existing Gilroy Co-Gen facility. The turbines are 50-megawatt (MW) peaking machines, GE model LM6000.

The Gilroy Project site is shown on the attached map and the legal description is provided below.

Gilroy Project vicinity:

Gilroy 7.5 USGS Quad Map-T10S, R4E, unsectioned
Chittenden 7.5 USGS Quad Map-T10S, R4E, unsectioned

Construction for this facility is planned for the summer of 2001, and we are in the process of preparing our application for the CEC.

The Native American Heritage Commission provided Foster Wheeler Environmental with your name and address as someone who may have knowledge of heritage lands or other resources of interest that the project would potentially affect. Please notify us if there are any sites or locations of specific concern within the project vicinity.

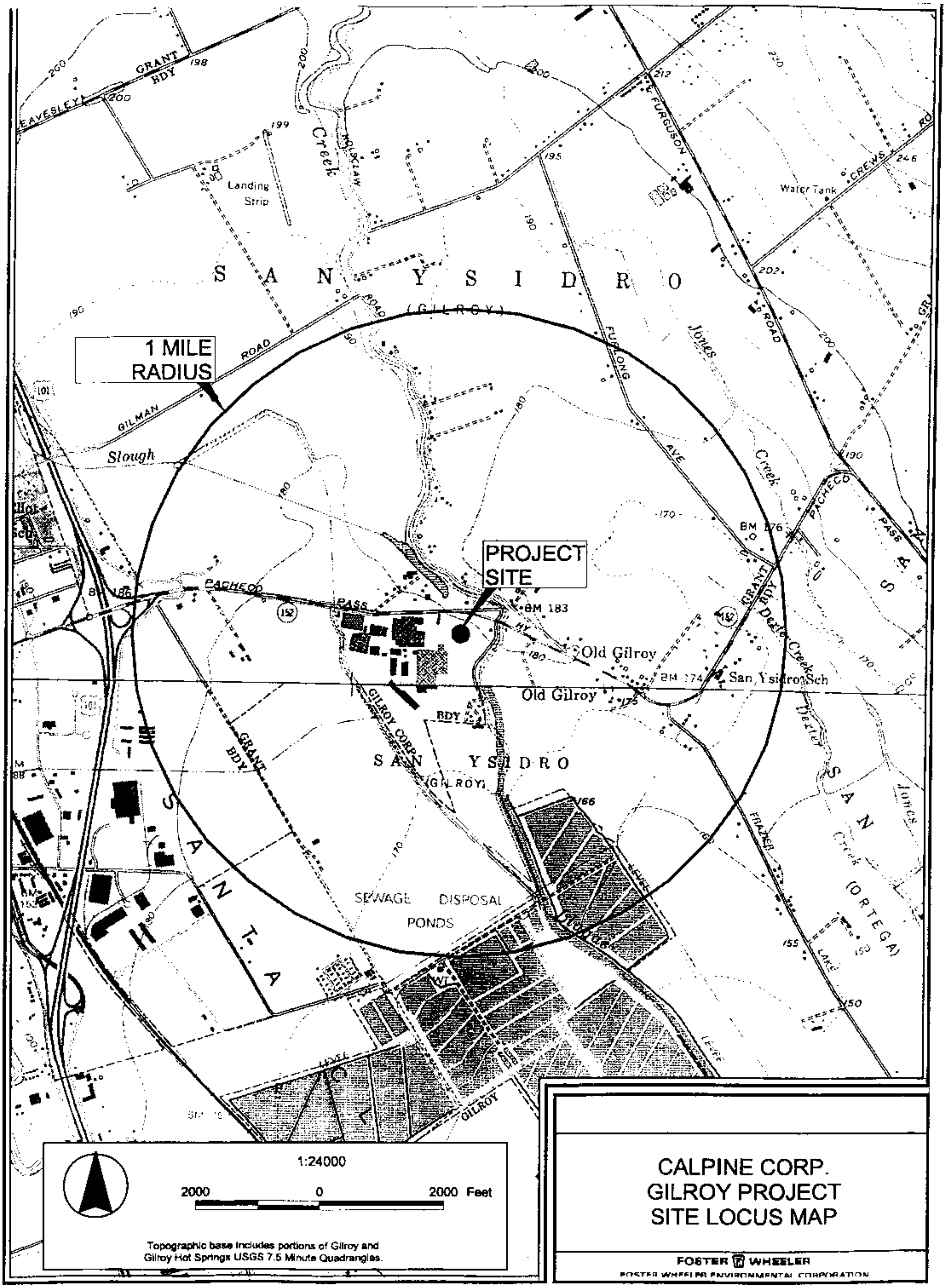
Due to the current critical energy crisis in California, we would like to expedite the cultural resource notification response. Please reference the "Gilroy Project" in your correspondence, and send the information to the FAX number or address at the bottom of this page. You can contact me at

(916) 928-0202 if you have any questions. We greatly appreciate your immediate attention to this matter.

Sincerely,

Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine



CALPINE CORP.
GILROY PROJECT
SITE LOCUS MAP
FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION
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Topographic base includes portions of Gilroy and Gilroy Hot Springs USGS 7.5 Minute Quadrangles.
1 MILE RADIUS
PROJECT SITE
SAN YSIDRO
(GILROY)
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SEWAGE DISPOSAL PONDS
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CREWS ROAD
FRAZIER LAKE
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GILROY CORP BDY
Slough
Jones Creek
Dexter Creek
Creek (ORTEGA)
BM 183
BM 176
BM 174

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Ella Rodriguez
PO Box 1411
Salinas, CA 93902

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Rodriguez:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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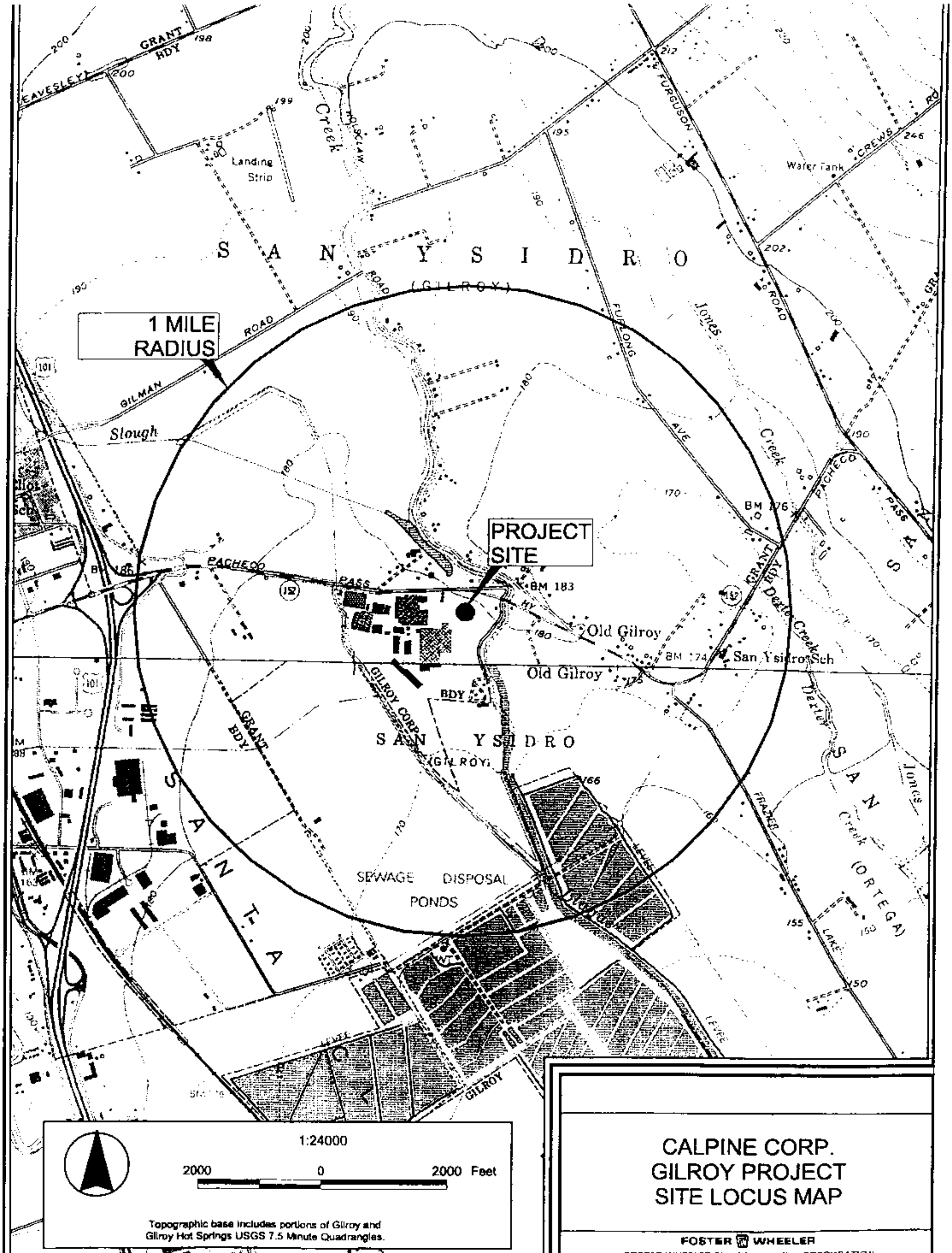
Sincerely,

Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine

3947 Lennane Drive, Suite 200, Sacramento, CA 95834-1973
Tel 916-928-0202 Fax 916-928-0594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GILROY PROJECT
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FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Marjorie Ann Reid
4869 Englewood Dr.
San Jose, CA 95129

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Reid:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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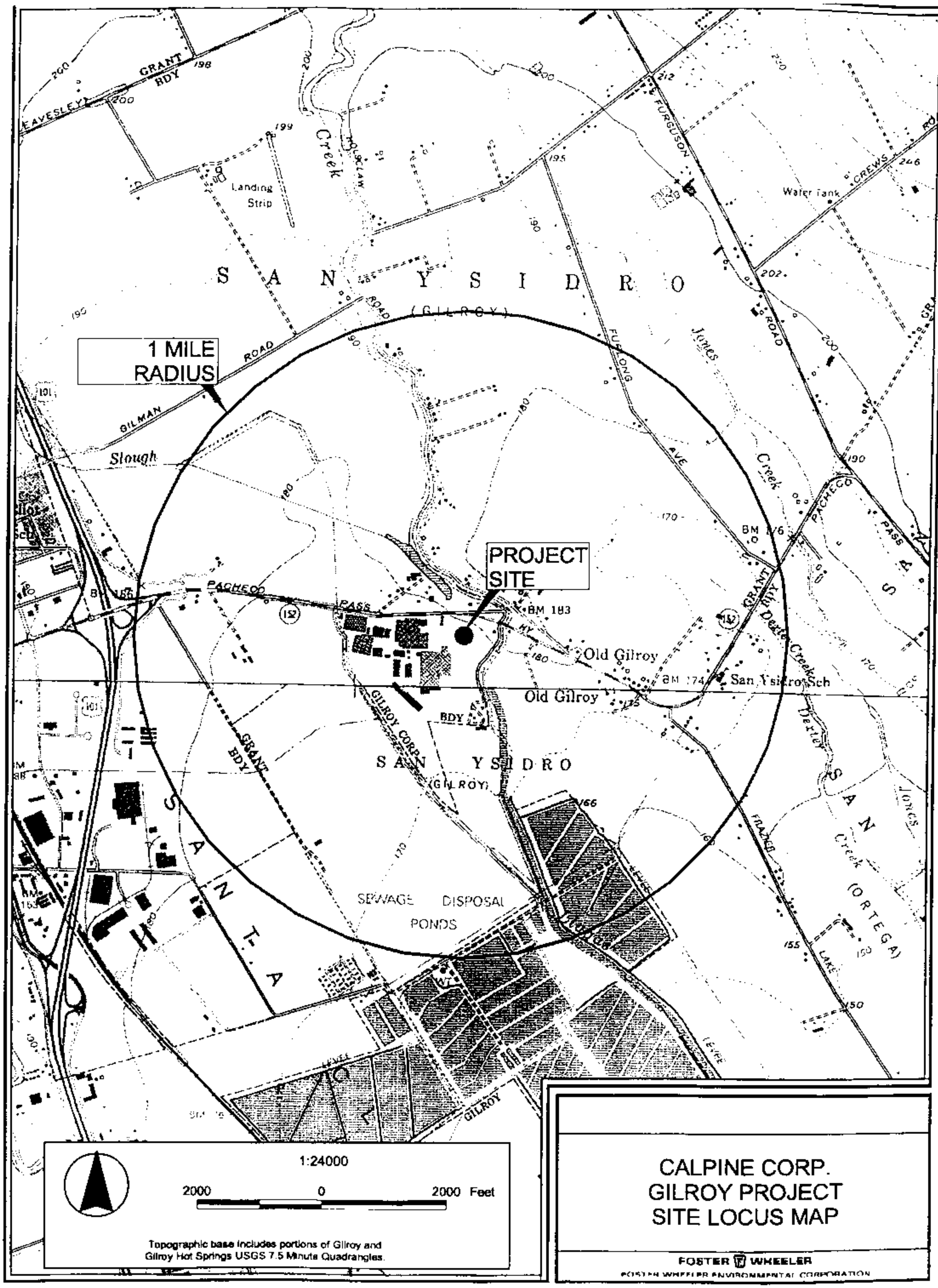
3927 Lennane Drive, Suite 200, Sacramento, California 95834-1957
Tel: 916-928-0202 Fax: 916-928-0594

Sincerely,

Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine

3947 Lennane Drive, Suite 200, Sacramento, CA 95834-1973
Tel 916-928-0202 Fax 916-928-0594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CALPINE CORP.
GILROY PROJECT
SITE LOCUS MAP
FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Michelle Zimmer
4952 McCoy Acenue
San Jose, CA 95130

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Zimmer:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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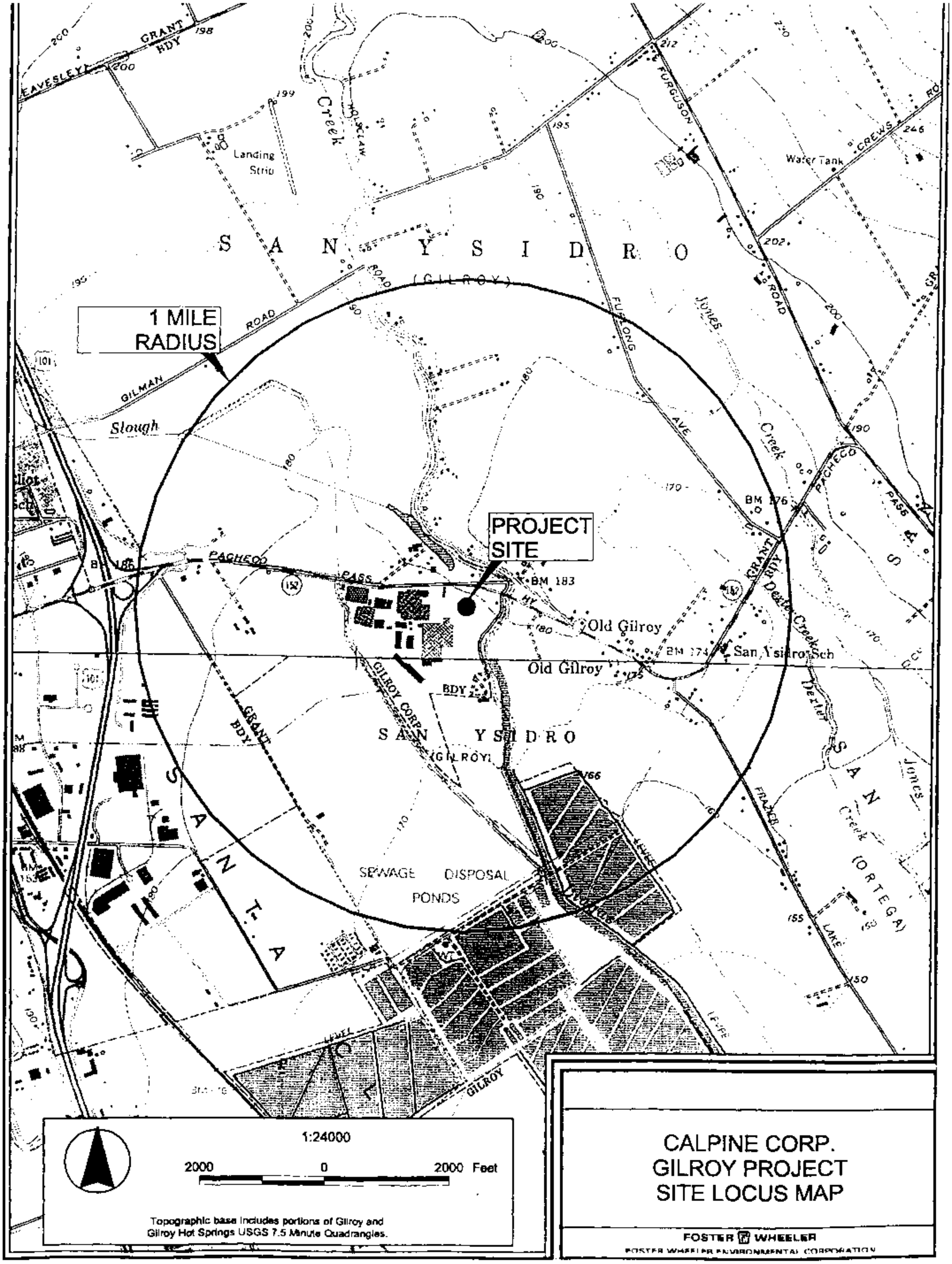
Sincerely,

Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine



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GILROY PROJECT
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FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Linda G. Yamane
1195 B Rousch Ave.
Seaside, CA 93955

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Yamane:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine

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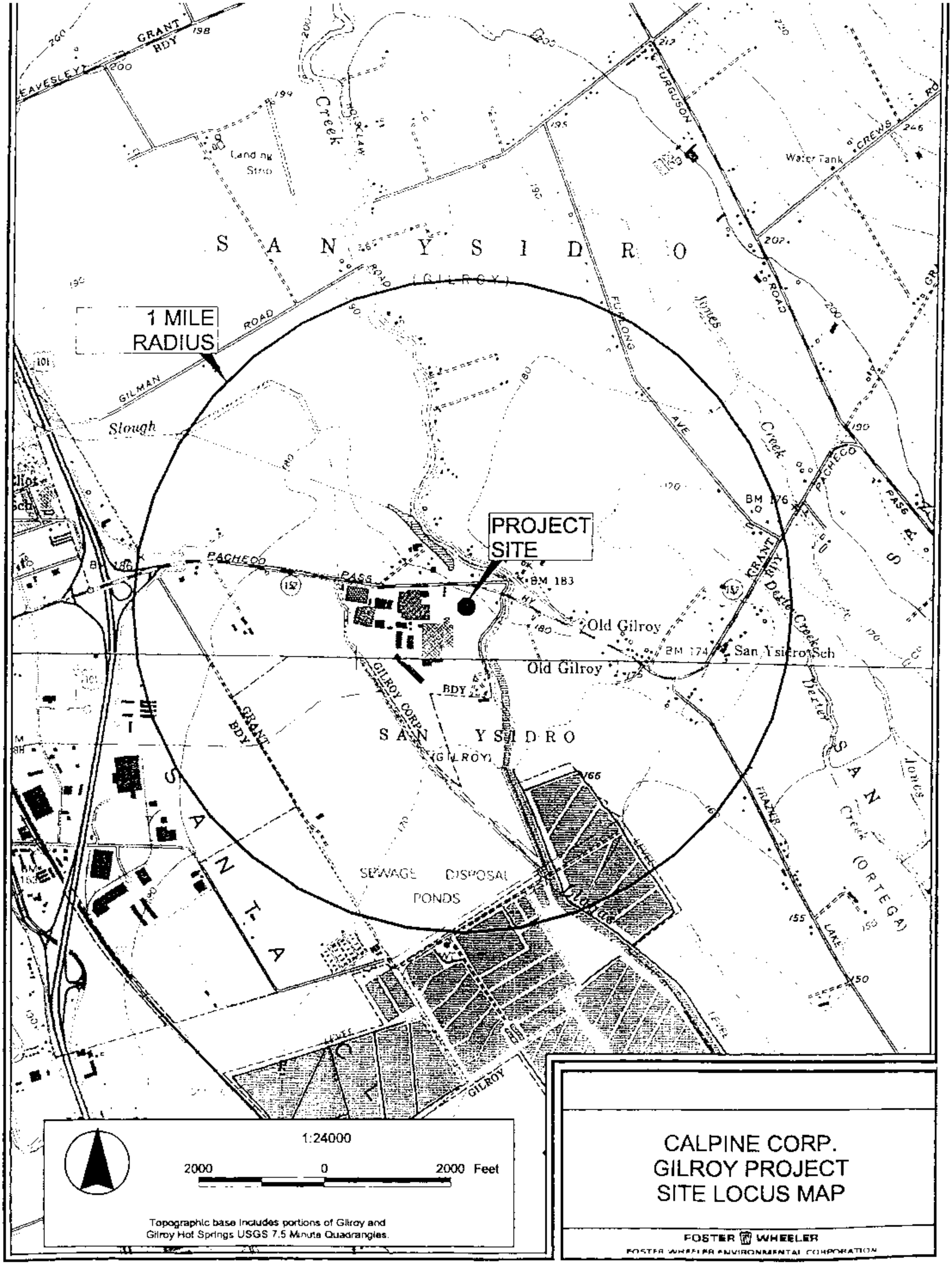
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FOSTER WHEELER ENVIRONMENTAL CORPORATION

FOSTER WHEELER

FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayer, Chairperson
PO Box 28
Hollister, CA 95024

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Sayer:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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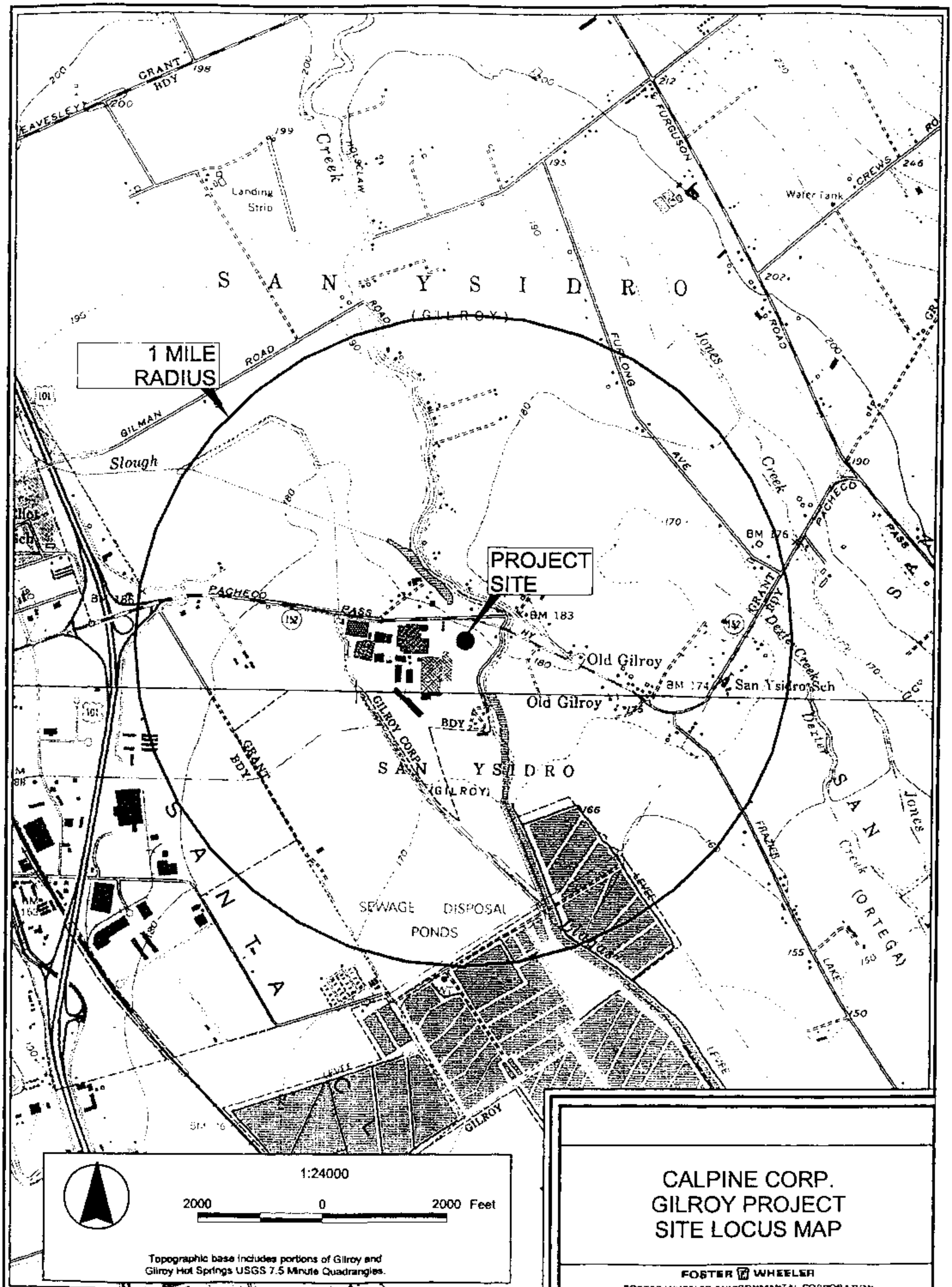
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FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Katherine Erolinda Perez
1234 Luna Lane
Stockton, CA 95206

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Perez:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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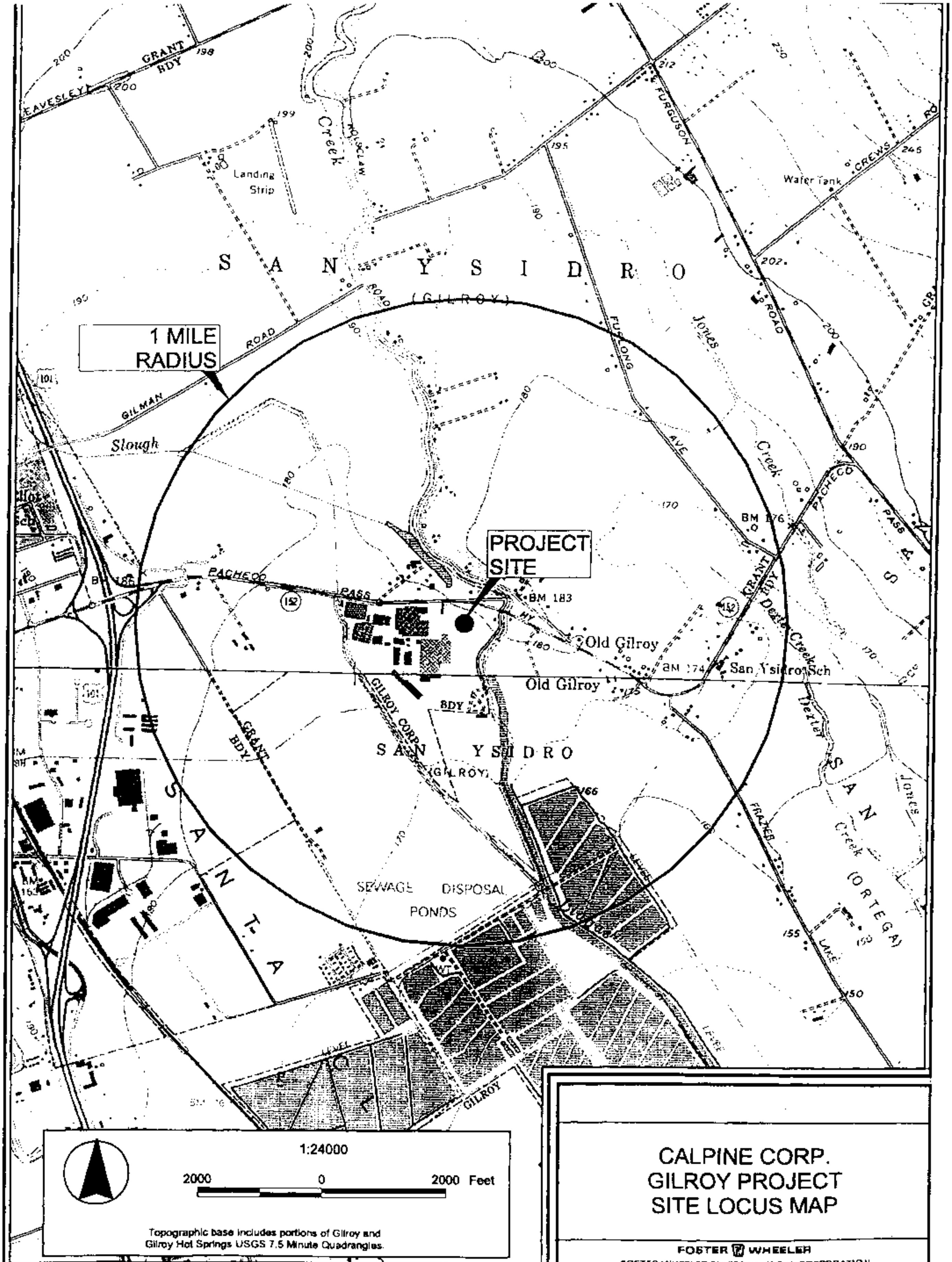

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FOSTER WHEELER ENVIRONMENTAL CORPORATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Amah San Juan Band
Marian Martinez
26206 Coleman Avenue
Hayward, CA 94544

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Martinez:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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Jenna Farrell

Cultural Resource Specialist

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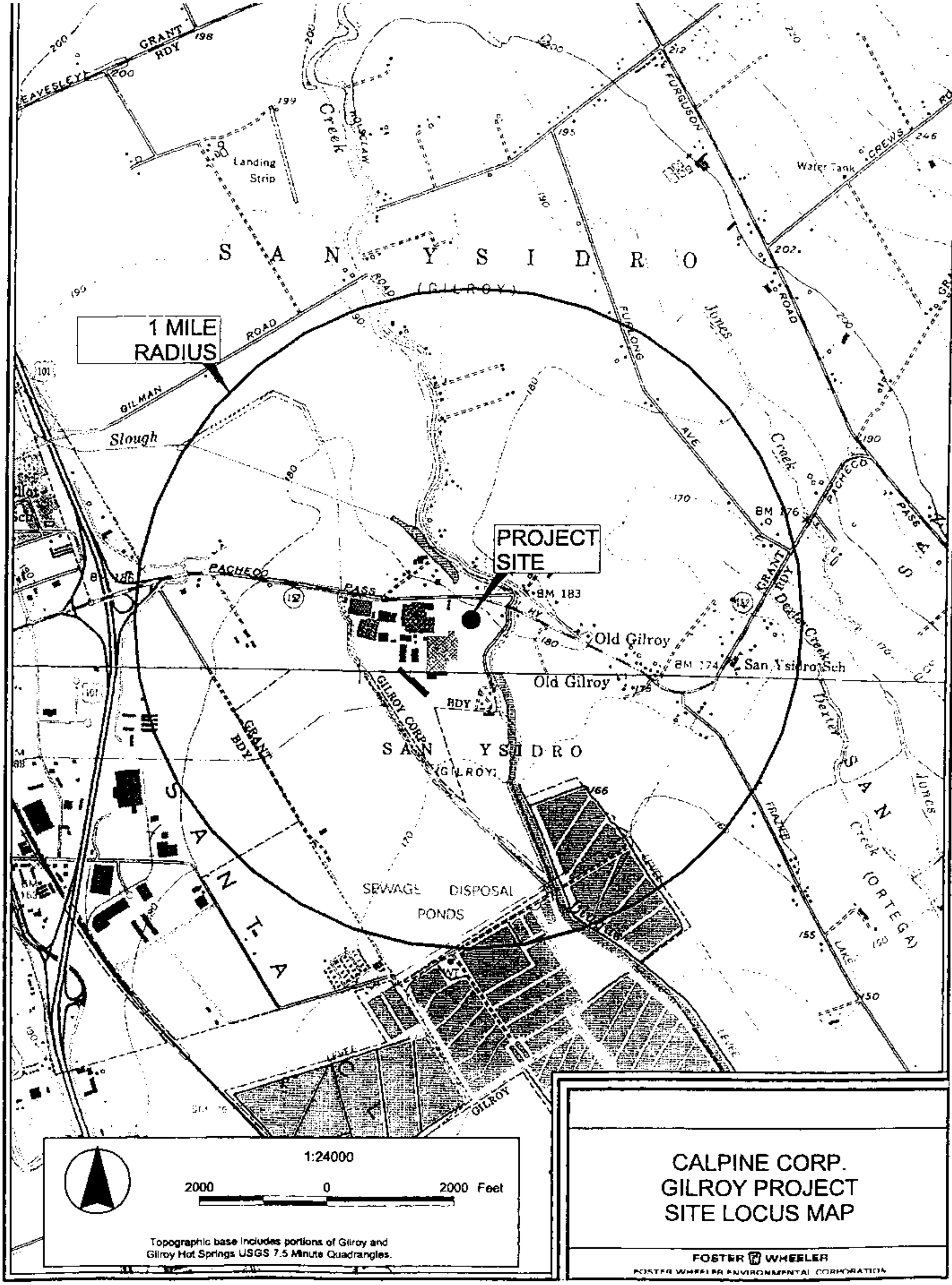

CALPINE CORP.
GILROY PROJECT
SITE LOCUS MAP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Thomas P. Soto
PO Box 269
Foresthill, CA 95631

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Mr. Soto:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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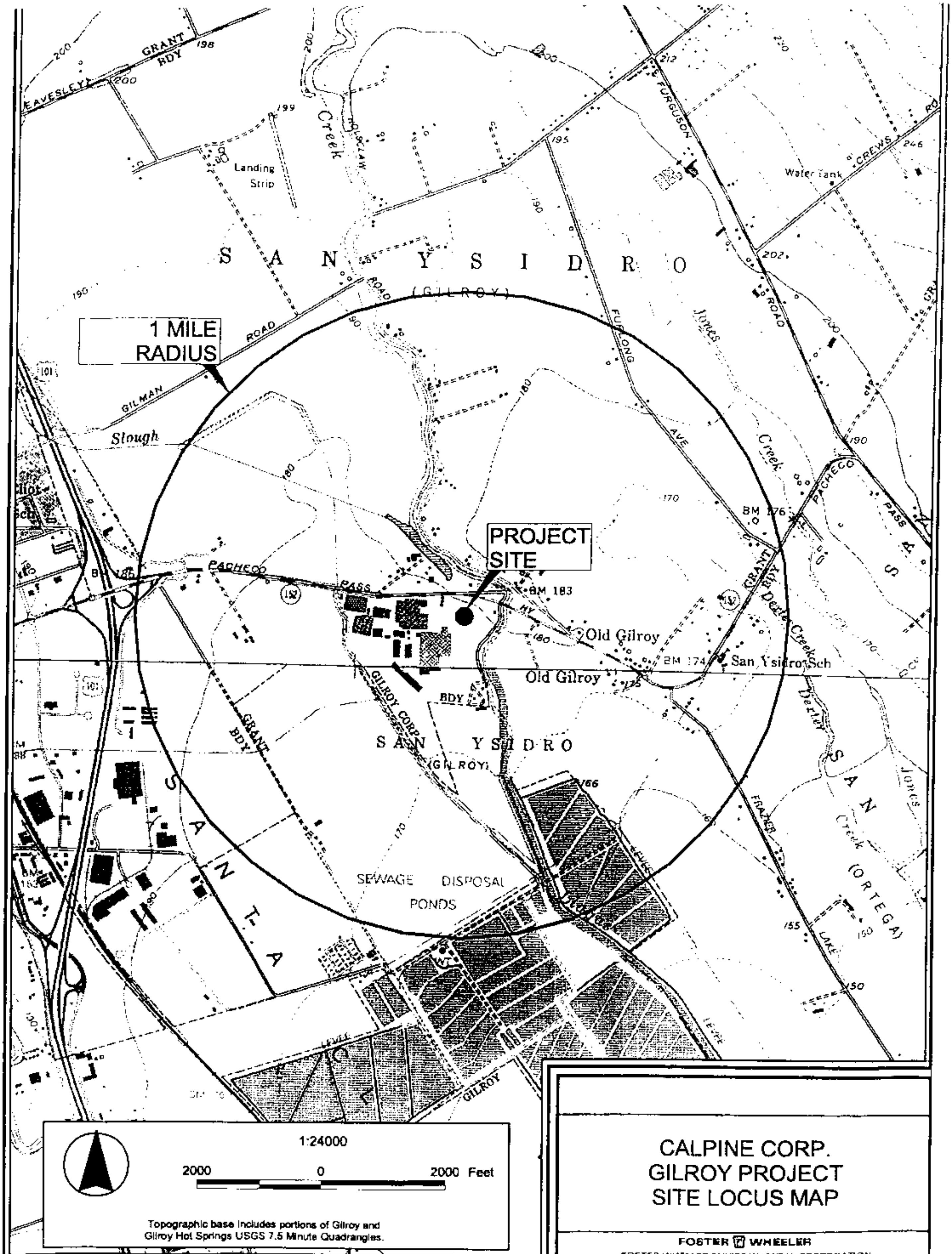
Sincerely,

Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine

3947 Lennane Drive, Suite 200, Sacramento, CA 95834-1973
Tel: 916-928-0202 Fax: 916-928-0594



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CREWS RD
Water Tank
Landing Strip
Jones Creek
Dexter Creek
FRAZER LAKE
BM 183
BM 174
BM 176
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2000
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2000 Feet
Topographic base includes portions of Gilroy and Gilroy Hot Springs USGS 7.5 Minute Quadrangles.
CALPINE CORP.
GILROY PROJECT
SITE LOCUS MAP
FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Irene Zwierlein
789 Canada Road
Woodside, CA 94062

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Zwierlein:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

The Gilroy Project will consist of the installation of six natural-gas-fired simple-cycle turbines adjacent to the existing Gilroy Co-Gen facility. The turbines are 50-megawatt (MW) peaking machines, GE model LM6000.

The Gilroy Project site is shown on the attached map and the legal description is provided below.

Gilroy Project vicinity:

Gilroy 7.5 USGS Quad Map-T10S, R4E, unsectioned
Chittenden 7.5 USGS Quad Map-T10S, R4E, unsectioned

Construction for this facility is planned for the summer of 2001, and we are in the process of preparing our application for the CEC.

The Native American Heritage Commission provided Foster Wheeler Environmental with your name and address as someone who may have knowledge of heritage lands or other resources of interest that the project would potentially affect. Please notify us if there are any sites or locations of specific concern within the project vicinity.

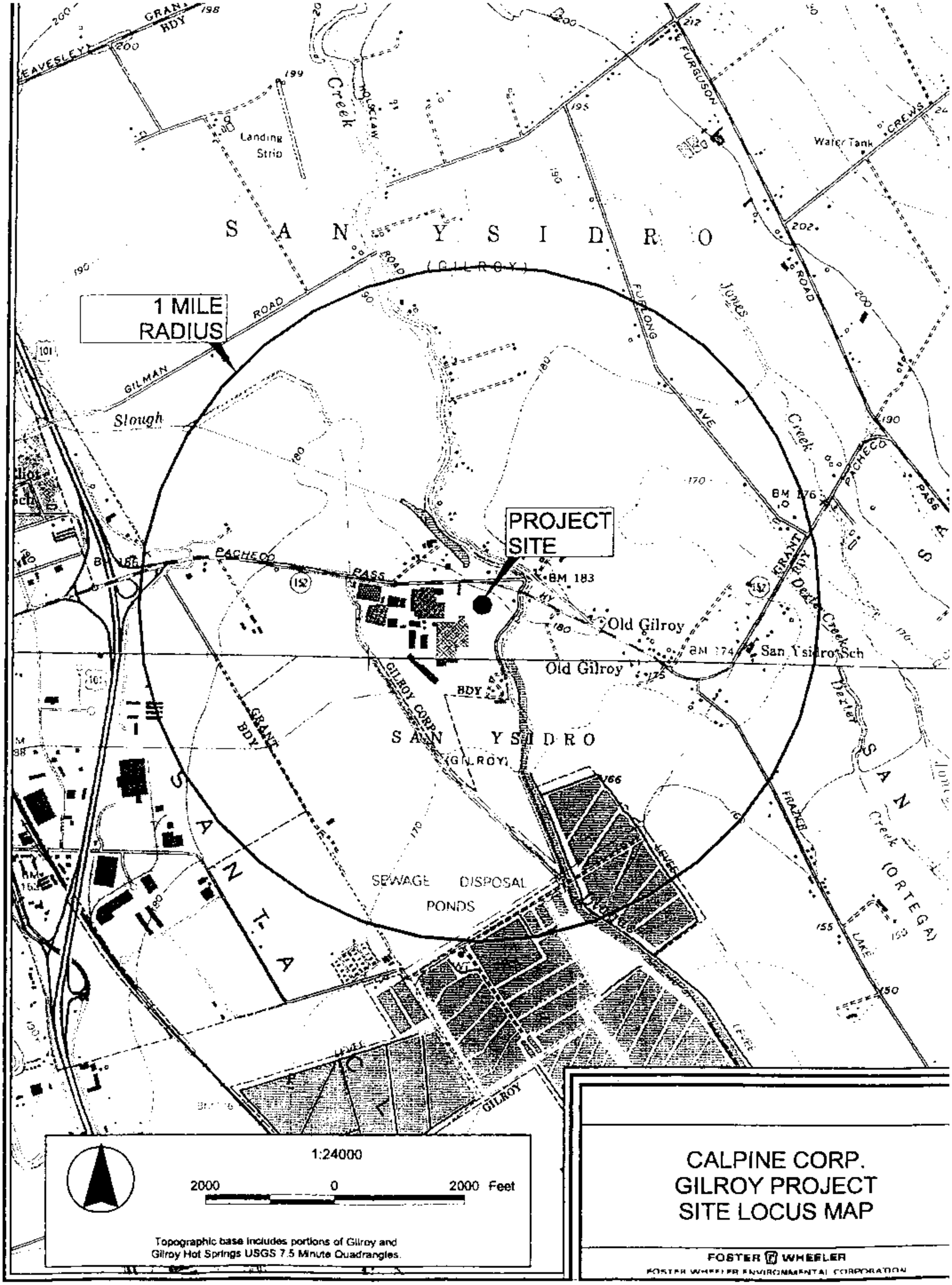
Due to the current critical energy crisis in California, we would like to expedite the cultural resource notification response. Please reference the "Gilroy Project" in your correspondence, and send the information to the FAX number or address at the bottom of this page. You can contact me at (916) 928-0202 if you have any questions. We greatly appreciate your immediate attention to this matter.

3927 Lennane Drive, Suite 200, Sacramento, California 95834-1957
Tel: 916-928-0202 Fax: 916-928-0594

Sincerely,

Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine



CALPINE CORP.
GILROY PROJECT
SITE LOCUS MAP

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Trina Marine Ruano Family
Ramona Garibay, Representative
37974 Canyon Hts. Drive
Fremont, CA 94536

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Garibay:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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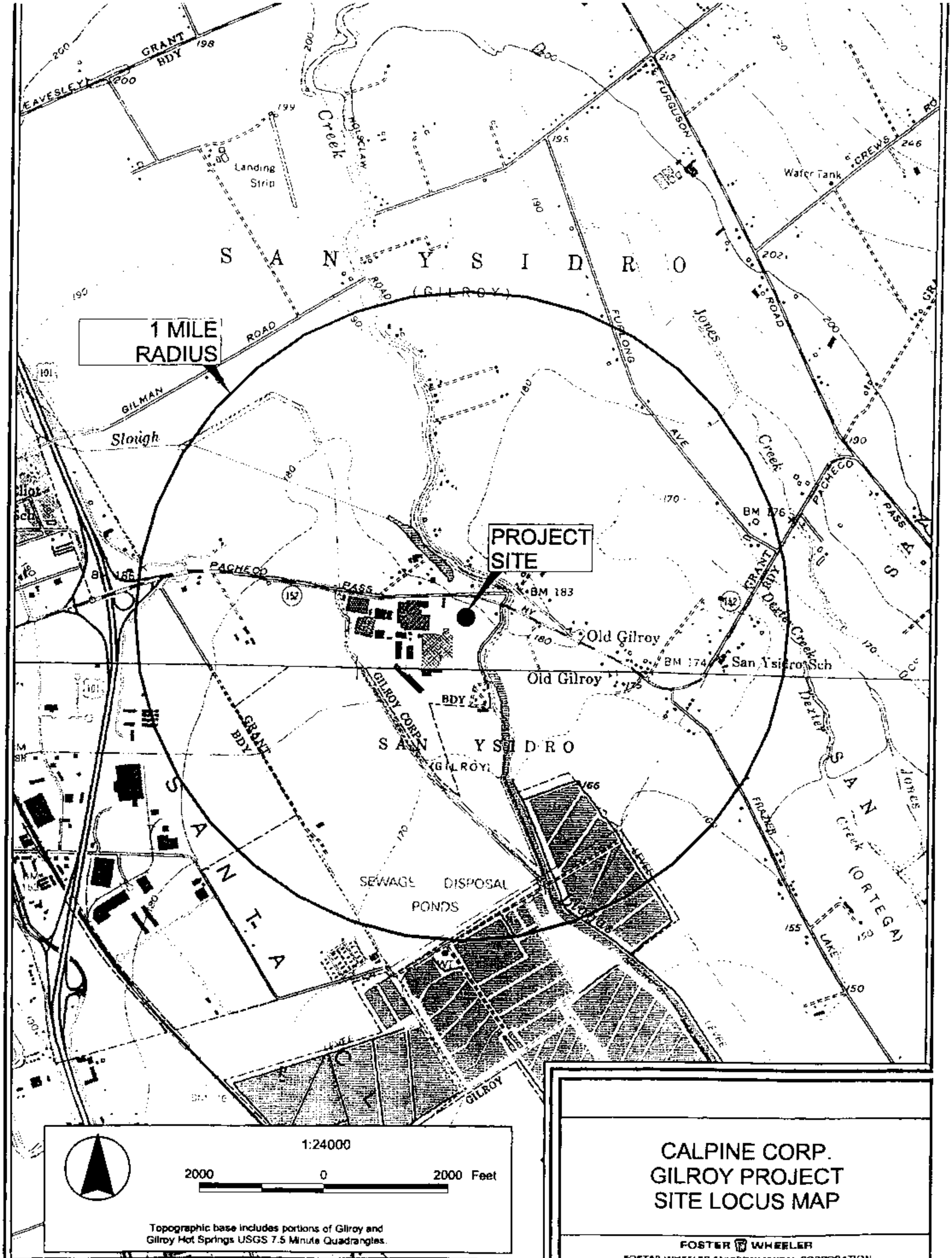
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GILROY PROJECT
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FOSTER WHEELER
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FOSTER WHEELER

FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Amah San Jaun Band
Charles Higuera
1316 Buena Vista Ave.
Pacific Grove, CA 93950

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Mr. Higuera:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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Sincerely,

Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine

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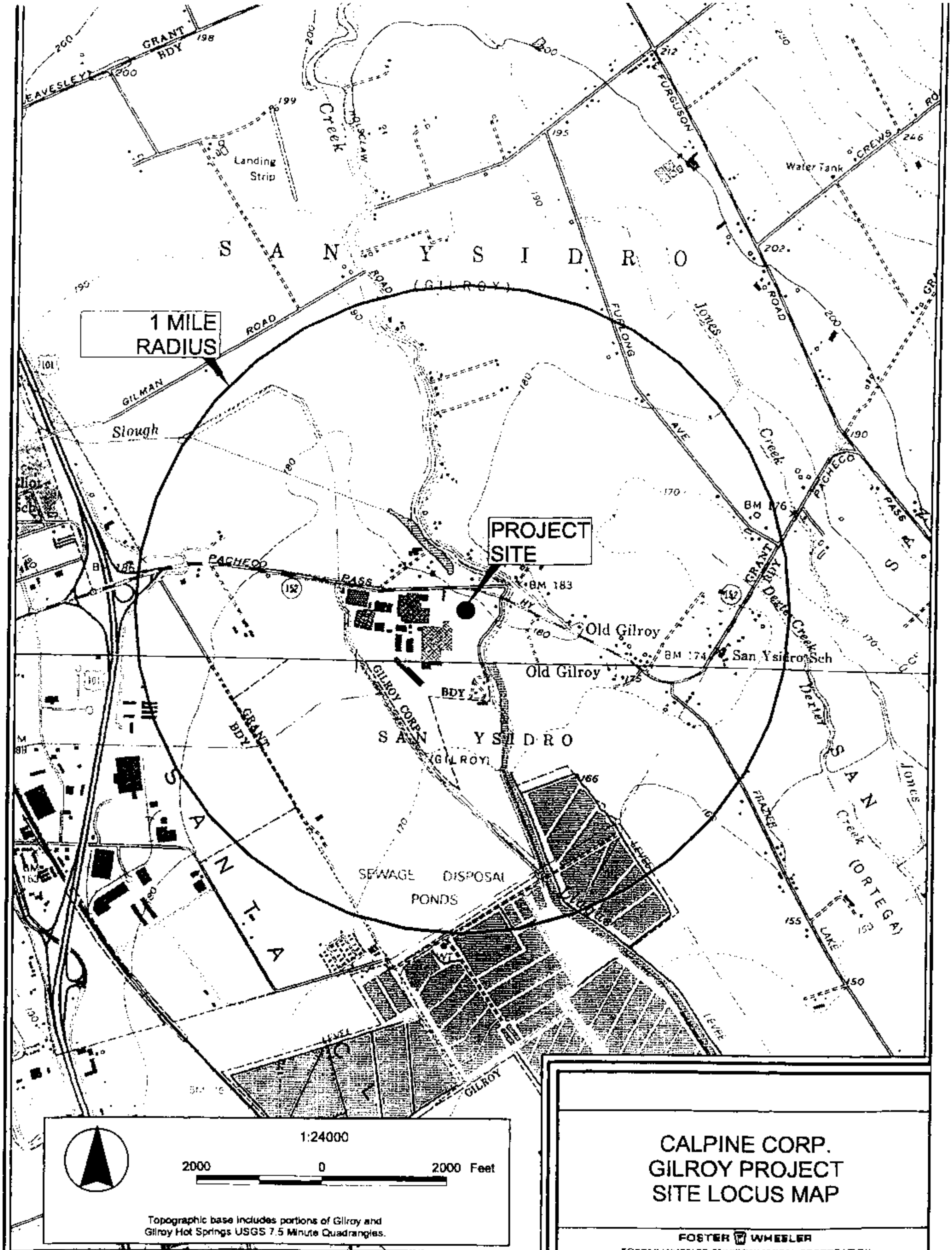
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SITE LOCUS MAP
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FOSTER WHEELER ENVIRONMENTAL CORPORATION

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

April 17, 2001

Jakki Kehl
5461 Beaver Lane
Byron, CA 94514

Subject: THE GILROY LM6000 ENERGY GENERATION PROJECT IN SANTA CLARA COUNTY

Dear Ms. Kehl:

Calpine is proposing to build the Gilroy LM6000 Project in response to the state of emergency declared by Governor Davis in response to the shortage of electricity. Governor Davis issued several executive orders on February 8, 2001. Executive Order D-26-01 directs the California Energy Commission (CEC) to expedite the review and approval of peaking power projects that can be on-line in the summer of 2001. All such proposals are considered emergency projects under Public Resources Code section 21080(b)(4). Foster Wheeler Environmental Corporation is assisting Calpine in preparing the environmental assessment for the emergency CEC filing for this project.

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3927 Lennane Drive, Suite 200, Sacramento, California 95834-1957
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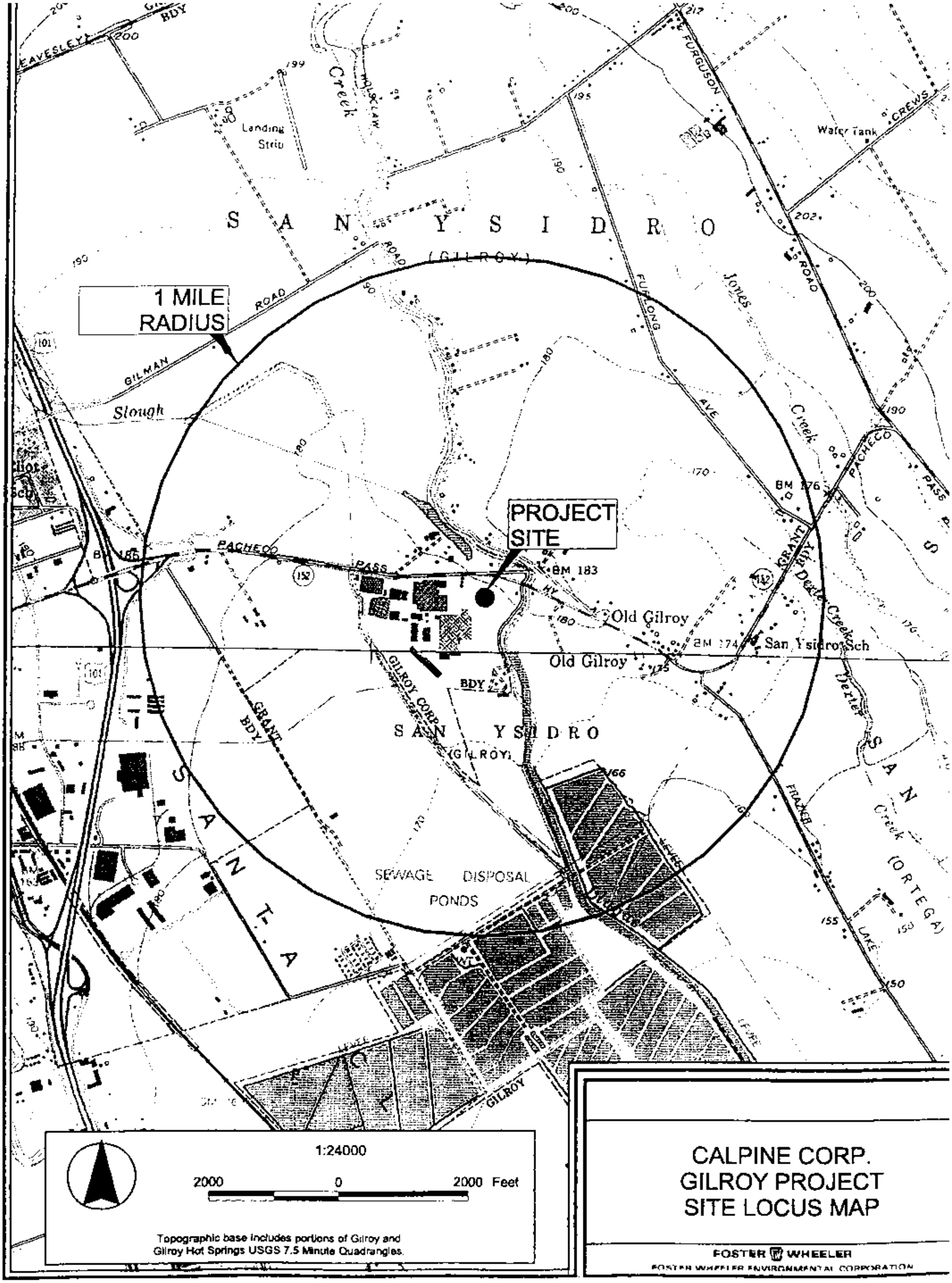
(916) 928-0202 if you have any questions. We greatly appreciate your immediate attention to this matter.

Sincerely,

Jenna Farrell
Cultural Resource Specialist

c: L. Sicuranza and K. Doherty, Foster Wheeler Environmental
B. McDonald, Calpine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G

Appendix G: SPCC Plan

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Appendix G – Draft Revisions to Gilroy Facility SPCC Plan

Introduction

Calpine has a certified SPCC Plan for the Gilroy Co-Gen Facility (Attached); Calpine will modify the plan to incorporate the proposed project. This document outlines revisions to the existing SPCC Plan for the Gilroy Co-Gen facility that are necessitated by the additional of the LM6000 generating units and associated equipment. The primary changes are due to the addition of new oil-filled transformers and other equipment, and changes to site drainage. Oil-filled equipment is identified in Section 7.0, Hazardous Materials. Site drainage will be finalized during the SWPP permit process. When final site drainage information is available, the revisions will be finalized, and the SPCC Plan will be amended and signed by a California registered professional engineer.

Draft Revisions (by Plan section)

Part 1 General Information

7. Potential Spills – Prediction and Controls, Including Table 1.

This section will be revised to include descriptions of the new oil-filled equipment to be installed on the site and volumes of oil stored on site.

Part 2 Design, Prevention, and Control Information

This section will be revised to describe the measures to be taken to prevent, contain and control potential oil spills from the new equipment. It will detail containment systems, preventive maintenance, testing, inspections, record keeping, reporting and personnel training. This section will also be modified to incorporate changes in site drainage and stormwater collection into the plan.

Prepared by: James F. Walker, P.E. **Date: 02/12/97**

Approved by: **Date:**

TABLE OF CONTENTS

INTRODUCTION

PURPOSE

The purpose of this plan is to set forth the oil spill prevention and response procedures and policies for Calpine Gilroy Cogen. This Spill Prevention Control and Countermeasure Plan (SPCC Plan) was prepared in accordance with the requirements of Title 40, Code of Federal Regulations Part 112, as in effect on July 1, 1996, and under the guidance of the American Petroleum Institute (API) Bulletin D16, "Suggested Procedure for Development of Spill Prevention Control and Countermeasure Plans," second edition, August 1, 1989.

In accordance with 40 CFR Part 112.5, this SPCC Plan will be amended whenever there is a change in facility design, construction, operation or maintenance which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.

Additionally, the SPCC Plan will be reviewed, evaluated, and, if necessary, amended at least once every three years. All amendments will be fully implemented not later than six months after the review occurs.

SPCC PLAN REQUIREMENTS

The Federal Water Pollution Control Act Amendments of 1972 required the Administrator of the Environmental Protection Agency (EPA) to enter into a program designed to prevent, reduce, or eliminate pollution of the navigable waters of the United States. On December 11, 1973, the EPA published regulations for the prevention of pollution of the waters of the United States by oil from non-transportation related facilities. The "Oil Pollution Prevention" regulations, found in Title 40, Code of Federal Regulations, Part 112, became effective on January 10, 1974, and require the preparation and implementation of a Spill Prevention Control and Countermeasure Plan for all non-transportation related facilities which have discharged or have the potential to discharge oil into navigable waters of the United States or on adjoining shorelines.

Additionally, the State of California enacted the Aboveground Petroleum Storage Act in 1990. This Act requires that a SPCC Plan be prepared and implemented by all facilities that are included in the Federal "Oil Pollution Prevention" regulations or have an aboveground petroleum storage capacity of 10,000 gallons or more.

DEFINITIONS

Navigable Waterway

Navigable waters means the waters of the United States, including the territorial seas. The term includes: (a) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; (b) Interstate waters, including interstate wetlands; (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) That are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and/or sold in interstate or foreign commerce; (3) That are used or could be used for industrial purposes by industries in interstate commerce.

Reportable Spill - Federal

The discharge of any amount of oil or petroleum products (including an amount sufficient to cause a sheen on the water) to a navigable waterway or to a location where the spilled oil may enter into a navigable waterway.

Reportable Spill - State

A reportable spill is defined as a spill of crude oil or its fractions in the amount of:

A) any amount to a navigable waterway.

B) one barrel (42 gallons) or more to land.

NOTIFICATION REQUIREMENTS

State law requires any petroleum spill to the waters of the State, or any spill to land in excess of one barrel (42 gallons), to be reported to the State Office of Emergency Services. Failure to make the appropriate notifications in the event of a spill may result in fines and penalties.

Federal laws require that any petroleum spill to the waters of the United States be reported to the National Response Center, the U.S. Environmental Protection Agency, and/or the U.S. Coast Guard. Failure to make the appropriate notifications in the event of a spill may result in fines and penalties.

OPERATING REQUIREMENTS

All operations at the facility which have the potential to cause a spill of petroleum or petroleum products to any waterway (even dry creek beds) must be conducted in accordance with this SPCC Plan and good operating standards. In the event of a reportable spill, all notification requirements must be made in accordance with State and Federal regulations. Spill incident reports must be completed for all petroleum spills.

It is the responsibility of all company personnel to be on the alert for conditions that may lead to or cause a spill. Any such conditions should be immediately reported to the supervisor.

MANAGEMENT APPROVAL

This SPCC Plan will be implemented as herein described.

Signature: ______________________________

Name: ______________________________

Title: ______________________________

CERTIFICATION

I hereby certify that I am familiar with cogeneration operations, and being familiar with the provisions of 40 CFR, Part 112, attest that this SPCC Plan has been prepared in accordance with good engineering practices. This is an engineering report of our opinions and conclusions based on the data provided by Calpine Gilroy Cogen, and by actual field observations. Facilities installed after January 14, 1997, the date of the field survey, are not included in this report. Reviewing the structural integrity of the berms was outside the scope of work.

____
Printed Name of Registered Professional Engineer

____
Signature of Registered Professional Engineer

Date:______________ Registration No.________________ State ____________

PART 1

GENERAL INFORMATION

1. **Name of Facility:** Calpine Gilroy Cogen

2. **Purpose of Facility:** The Plant produces electric power for sale to Pacific Gas and Electric Company. Steam is also simultaneously produced and used at Gilroy Foods for the dehydration of onions, garlic and peppers.

3. **Location of the Facility:** Santa Clara County, California, within the city limits of Gilroy.

4. **Name and Address of Plant Operator:**

   Calpine Corporation
   1400 Pacheco Pass Highway
   P.O. Box 1764
   Gilroy, CA 95021

5. **Person(s) in Charge of Spill Prevention (Name and Title):**

   Brian Martin, Plant Engineer

6. Reportable Oil Spills at Calpine Gilroy Cogen:

The following reported oil spills have occurred at the Calpine Gilroy Cogen Plant:

October 17, 1990 – transformer containing approximately 65 gallons of oil was struck by lightning.

October 16, 1991 – 10 gallon oil spill to soil. Spill was reported even though it was not large enough to be defined as a reportable spill.

7. Potential Spills - Prediction and Control

The potential for an oil spill exists anywhere that oil is stored, used, or transported. Therefore, the potential for an oil spill exists at Calpine Gilroy Cogen. Following are brief descriptions of the Plant equipment which exhibit this potential and the measures taken to prevent and control spills in each case. Table 1, at the end of this section, provides a summary list. Details pertaining to design, prevention, and control (including the storm water collection system) can be found in Part 2 of the SPCC Plan.

<u>Fuel Oil System (out of service)</u>

Located on the north side of the facility is a 236,000 gallon fuel oil storage tank, FOGTNK120. The original purpose of the tank was to provide the Plant with an alternative fuel source for the gas turbine and the auxiliary boilers in case the supply of natural gas was curtailed. However, the tank is now out of service due to the low probability of a natural gas curtailment and the economics of burning fuel oil. Therefore, no potential for a spill is associated with the tank because no fuel oil is stored in the tank. Even though no fuel is stored in the tank, the secondary containment is still in place. The secondary containment has a capacity of 297,980 gallons. The berms surrounding the tank are lined with a synthetic, impermeable material. If the tank's "out of service" status changes, then the SPCC Plan will be amended as necessary.

Equipment used for the transport of the fuel oil to and from the tank include the Fuel Oil Loading Pump, Auxiliary Boiler Fuel Oil Forwarding Skid, Gas Turbine Fuel Oil Forwarding Skid, and connected piping. All underground piping associated with the fuel oil system has secondary containment. Since the fuel oil storage tank is out of service, this equipment is also out of service and, thereby, will not be involved in a fuel oil spill. In the case that fuel oil is once again used as a fuel, any leak or spill from the pump skids or pipes will be contained on site by the Plant's storm water containment system or the secondary containment for the underground fuel oil piping.

Lube Oil System

The Steam Turbine/Generator Lube Oil System, STATNK1703, includes a 1270 gallon reservoir, two pumps, an oil cooler/filter assembly, and connected piping. There is the potential for leaks and spills as equipment degenerates or machinery malfunctions. This potential is greatly reduced by routine inspection and maintenance. Secondary containment surrounds the reservoir, pumps and oil cooler/filter assembly to control a spill if one occurs.

If a pipe ruptures or the Steam Turbine catastrophically fails in such a way that the oil flows outside of the secondary containment, all of the oil will be prevented from leaving the site by the Plant's storm water containment system.

The Combustion Gas Turbine/Generator Lube Oil System, GTETNK001, is completely selfcontained. The reservoir is an integral part of the turbine's steel beam base structure and has a capacity of 2850 gallons. All associated equipment, such as pumps, filters and piping, are located within the turbine structure. The potential for leaks and spills exists as the equipment degenerates or machinery malfunctions. Routine inspection and maintenance greatly reduces this potential, though, and a leak or spill caused by equipment failure would be contained within the turbine or generator structures. If a catastrophic event occurred which resulted in the unlikely rupture of the reservoir, all of the spilled oil would be kept on site by the Plant's storm water collection system.

Dielectric Oil Mediums Within the Transformers

While all of the transformers are equipped with electrical protection systems to prevent equipment damage in the event of an electrical fault, the potential for equipment damage and an ensuing oil spill does exist.

Three transformers labeled X1, X3, and X4 are located in the southwest corner of the Plant. The volume of oil in each is 8100, 711 and 210 gallons, respectively. All are located in secondary containment as shown in Table 1.

Also located in the southwest corner of the Plant are four Current Transformer/Potential Transformers, CT/PT #1, #2, #3 & #4, which contain 65 gallons of oil each. Even though these are not located within secondary containment, no oil will be able to leave the site in the event of a spill because of the presence of the storm water collection system.

On the east side of the Plant are three transformers labeled X2, X5, and Spare, and on the east side of the gas turbine is a transformer labeled X6. Each of the four transformers holds 210 gallons of oil. None of the four are located within secondary containment, but the presence of the storm water collection system will not allow any oil to leave the site in the event of a spill.

Storage Facility

In the northeastern portion of the Plant is a lube oil storage facility which holds pales and drums of oil. The sizes of the pales and drums are 5 and 55 gallons respectively. The typical inventory of all the oil containers combined does not exceed 200 gallons. While the potential for a spill exists, it is reduced to an insignificant level by keeping the storage facility secure and the containers closed. In the unlikely event of a spill, the containment sump that is incorporated in the floor of the storage facility will control the oil.

VRS Screw Compressor Unit

The VSR Screw Compressor Unit installed in early 1994 to produce ice for cooling the Combustion Gas Turbine/Generator inlet air on hot days includes a 190 gallon reservoir, TESTNK801 compressors, pumps, condensers and connected piping. The potential for leaks and spills exists as the equipment degenerates or machinery malfunctions. Routine inspection and maintenance greatly reduces this potential. If a catastrophic event occurred which resulted in the unlikely rupture of the reservoir, all of the spilled oil would be kept on site by the Plant's storm water collection system.

Potential Spills Summary

Table 1 lists the equipment at the Calpine Gilroy Cogeneration Plant which store, transport, or use petroleum and, thereby, exhibit potential to be the sources of oil spills. Also summarized in Table 1 are the spill prevention and control measures in place for each.

In this section, all potential sources of petroleum spills have been addressed. Sufficient spill prevention and control measures are in place to stop the oil form leaving facility and discharging to navigable waters. The prevention and control measures are discussed in detail in Part 2.

Partially Buried and Buried Metallic Tanks

No partially buried or buried metallic tanks containing oil exist at the Calpine Cogeneration Plant.

TABLE 1
POTENTIAL SPILL SUMMARY

System Description	Equipment Description	Petroleum Capacity (gallons)	Spill Prevention Measures	Spill Control Structures	Secondary Containment Capacity (gallons)
Fuel Oil (Not in Service) FOGTNK120	Tank	236,000	Routine Inspections and Preventive Maintenance	Local Secondary Containment	297,980
	Loading Pump	NA	(same as above)	Storm Water Collection System	NA
	Auxiliary Boiler Forwarding Skid	NA	(same as above)	(same as above)	NA
	Gas Turbine Forwarding Skid	NA	(same as above)	(same as above)	NA
	Piping	NA	(same as above)	(same as above)	NA
	Auxiliary Boiler	NA	(same as above)	(same as above)	NA
	Gas Turbine	NA	(same as above)	(same as above)	NA
Lube Oil					
Steam Turbine/Generator STATNK1703	Reservoir	1,270	Routine Inspections and Preventive Maintenance	Local Secondary Containment	2,698
	Pump	NA	(same as above)	(same as above)	2,698
	Cooler-Filter	NA	(same as above)	(same as above)	2,698
	Piping	NA	(same as above)	Storm Water Collection System	NA
Combustion Gas Turbine/Generator GTETNK001	Reservoir	2,850	Routine Inspections and Preventive Maintenance	Storm Water Collection System	NA
	Pump	NA	(same as above)	(same as above)	NA
	Filter	NA	(same as above)	(same as above)	NA
	Piping	NA	(same as above)	(same as above)	NA
VRS Screw Compressor Unit TESTNK801	Reservoir	190	Routine Inspections and Preventive Maintenance	Storm Water Collection System	NA
	Compressors	NA	(same as above)	(same as above)	NA
	Pumps	NA	(same as above)	(same as above)	NA
	Condensers	NA	(same as above)	(same as above)	NA
	Filter	NA	(same as above)	(same as above)	NA
	Piping	NA	(same as above)	(same as above)	NA
Transformers	X1	8,100	Routine Inspections and Preventive Maintenance	Local Secondary Containment	23,156
	CT/PT #1	65	(same as above)	Storm Water Collection System	NA
	CT/PT #2	65	(same as above)	(same as above)	NA
	CT/PT #3	65	(same as above)	(same as above)	NA
	CT/PT #4	65	(same as above)	(same as above)	NA
	X3	711	(same as above)	Local Secondary Containment	6,731
	X4	210	(same as above)	(same as above)	6,731
	X2	210	(same as above)	Storm Water Collection System	NA
	X5	210	(same as above)	(same as above)	NA
	X6	210	(same as above)	(same as above)	NA
	Spare	210	(same as above)	(same as above)	NA
Lube Oil Storage Facility	Oil Storage	200	Security, Keeping Containers Closed	Local Secondary Containment	NA

PART 2

DESIGN, PREVENTION, AND CONTROL INFORMATION

Fuel Oil Tank(Out of Service)

The fuel oil tank is a fixed roof, welded steel tank that was built to the appropriate industry standards. It is set on a crushed rock foundation with a concrete ring wall and equipped with high liquid level alarms to alert operations personnel of potential overflow situations.

At the present time, the tank is out of service and no fuel oil is stored in it. If the tank is going to be used to store petroleum again, the tank will be inspected and any necessary maintenance will occur prior to use.

Piping Systems

Even though preventative measures have been taken, ruptures and leaks in the pipeline systems are still theoretically possible. The components most likely to fail in the piping systems are the flange gaskets, pump seals, and the valve and pump packing glands. In order to minimize failures, Calpine Gilroy Cogen has a preventative maintenance program in place that includes routine inspections, routine replacement of parts, corrosion protection, and, if necessary, pipeline replacement. All underground piping associated with the fuel oil system has been installed with secondary containment for the purpose of spill control.

Storm Water Collection System

The Calpine Gilroy Cogen Plant has been modified in order to contain all water run-off from a 20 year storm. A 20 year storm could produce as much as 6" of rain within a 24 hour period. If an oil spill occurs, the storm water collection system will also prevent the petroleum from leaving the facility. Land was graded, trenches were excavated, and pipes were installed to control storm water runoff by guiding the water to a sump next to the cooling tower. From the sump, the water flows to the waste water separator where oil could be removed by placing an oil absorbing pad on the liquid surface. The storm water is pumped into the cooling tower for make-up water. In the event of an oil spill, the storm water collection system will be shut down and the oil contaminated water will be removed by a vacuum truck and disposed of properly.

Secondary Containment

The Federal regulations require that all bulk storage tank installations be provided with secondary containment capable of holding the contents of the largest single tank plus sufficient freeboard to allow for precipitation. Table 1 lists the capacities of the equipment and the respective secondary containment.

As stated in Part 1, the secondary containment for the fuel oil tank (out of service) consists of a triangular area lined with an impermeable, synthetic material that covers the secondary containment berms. The capacity of the secondary containment is approximately 297,980 gallons. The capacity of the tank is 236,000 gallons. This leaves approximately 11 inches of freeboard to allow for precipitation. Therefore, it can be concluded that the secondary containment for the fuel oil tank meets the capacity requirements of the Federal regulations. Also, it can be concluded that a fuel oil spill from a rupture or leak in the tank will not endanger navigable waters.

The secondary containment for the Steam Turbine/Generator Lube Oil System has a capacity of 2,698 gallons, and the maximum volume of oil contained in the system is 1,270 gallons. Approximately 6 inches of freeboard remain for the allowance of precipitation. Therefore, the capacity of the secondary containment is in compliance with Federal regulations and is sufficient for the purpose of controlling a spill from the Steam Turbine/Generator Lube Oil System.

The Combustion Gas Turbine/Generator has no dedicated secondary containment. However, in the event of an oil spill, the spilled oil would be kept on the site by the Plant's storm water collection system.

The VRS Screw Compressor Unit has no dedicated secondary containment. However, in the event of an oil spill, the spilled oil would be kept on the site by the Plant's storm water collection system.

The secondary containment structure for transformer X1 has a capacity of 23,156 gallons. The oil storage capacity of X1 is 8,100 gallons. Subtracting the height of the volume occupied by the crushed rock, approximately 11 inches of freeboard remains for the allowance of precipitation. Therefore, the secondary containment meets the capacity requirements of the Federal regulations and is sufficiently large to contain all of the oil and water, if necessary.

Secondary containment for transformers X3 and X4 has a capacity of 10,097 gallons, and the total oil storage capacity of both transformers is 921 gallons. Subtracting the height of the volume occupied by the crushed rock, approximately 16 inches of freeboard remains for the allowance of precipitation. Therefore, the secondary containment meets the capacity requirements of the Federal regulations and is sufficiently large to contain all of the oil and water, if necessary.

Transformer CT/PT #1, CT/PT #2, CT/PT #3 and CT/PT #4 each have a capacity of 65 gallons of oil and each have no dedicated secondary containment. However, in the event of an oil spill, the spilled oil, the spilled oil would be kept on the site by the Plant's storm water collection system.

Transformers X2, X5, X6 and the spare each have a capacity of 210 gallons of oil and each have no dedicated secondary containment. However, in the event of an oil spill, the spilled oil would be kept on the site by the Plant's storm water collection system.

Integrity Testing

All tanks identified in Table 1 are visually inspected by operating personnel for signs of deterioration, leaks which might cause a spill, or accumulation of oil inside secondarily contained areas. Inspections are conducted once per week, and the results are recorded and maintained on file. In addition, the storm water collection system sump is inspected for signs of oil accumulation.

Fail-Safe Engineering

Excluding the Fuel Oil Tank which is currently not in use, none of the existing sources have high liquid level alarms. However, the Steam Turbine/Generator, the Combustion Gas Turbine/Generator and the VRS Screw Compressor Unit are each equipped with low liquid level alarms which remote alarm at the Plant control room. In addition, the Combustion Gas Turbine/Generator liquid level alarm alarms locally. For each of these three sources, the stored oil contained therein is cleaned in place, replaced using 55 gallon drums or on rare occasions completely removed and replaced via tank truck (once every other year).

The transformers are only filled once with oil and do not require refilling for the life of the transformer unless a leak occurs

A high liquid level alarm is scheduled to be installed in the storm water collection system sump within the first quarter of 1997.

Facility Transfer Operations, Pumps, and In-Plant Processing

Excluding the Fuel Oil Tank System which is currently empty and not in use, no other buried oil conveying piping exists at the Calpine Gilroy Cogeneration Plant. To signify that the Fuel Oil Tank System is not in service, the fill pipe to the Fuel Oil Tank is locked closed. By the end of the first quarter of 1997, a sign will be located at the Fuel Oil Tank fill pipe stating that the tank is empty and out of service.

All aboveground valves and pipelines associated with the sources listed in Table 1, excluding the Fuel Oil Tank System, are regularly inspected by operating personnel once per shift for signs of needed maintenance/repair. If some required maintenance/repair is observed, a work order is generated. If not, no written documentation of the inspection is made. In addition to the shift inspections, the Calpine Gilroy Cogeneration Plant has a computerized maintenance program which generates work orders for normally scheduled maintenance.

Facility Tank Truck Loading/Unloading

A dedicated quick drainage system, an interlock warning light or warnings signs for tank truck loading/unloading are not present at the Plant for the following reasons:

The Fuel Oil Tank System is not currently in use.

The Steam Turbine/Generator, the Combustion Gas Turbine/Generator and the VRS Screw Compressor Unit are refilled so infrequently that Calpine Gilroy Cogeneration Plant personnel will be present to prevent vehicular departure before complete disconnect of oil transfer lines, and to check for tank truck oil leaks before the tank truck leaves the Plant.

However, in the event of an oil spill, the spilled oil would be kept on site by the Plant's storm water collection system.

Inspections and Records

Following is a list of the written procedures and inspections associated with the Calpine Gilroy Cogeneration Plant:

Inspection Log for Containerized Waste Storage Area and Plant Hazardous Materials Storage Locations – This inspection log is completed weekly and includes the visual inspection of the sources listed in Table 1 and associated secondary containment areas. Each completed inspection log is signed by the appropriate supervisor or inspector and filed in the Plant main office in File #814 for a period of three years. If during the inspection a needed repair or maintenance activity is identified, a work order is generated for the requested activity. Work orders are stored electronically in Calpine Gilroy Cogen Plant's computerized maintenance scheduler program.

Level sensors and alarms associated with the sources listed in Table 1 are inspected and maintained on a regular basis. Required inspections and maintenance are issued on work orders from Gilroy Cogen Plant's computerized maintenance scheduler program.

Records of Plant personnel reviewing this SPCC Plan are maintained in the Plant Personnel Qualification Records, File #103.

Security

Calpine Gilroy Cogen has lighting present around the sources listed in Table 1 and is manned on a 24 hour basis. The Plant is fenced with access via a security gate that is monitored by closed circuit television. All access points to the facility are locked when authorized personnel are not present. Access to all process equipment and storage facilities is limited to authorized personnel.

Personnel Training and Spill Prevention Procedures

All appropriate personnel are instructed in the operation and maintenance of equipment in order to prevent oil discharges and are familiarized with the applicable pollution control laws, rules, and regulations. New employees are instructed in these subjects within six months of the first day of employment. Refresher training on the contents of the SPCC Plan will occur periodically in order to assure employee understanding and compliance. Training and briefings will be carried out both on the job and in specialized meetings.

APPENDIX "A"

CONTINGENCY PLAN

CONTINGENCY PLAN

The contingency plan was developed to address, in general, the procedures to be followed in the event of an oil spill. Procedures followed in a specific situation will be determined to some extent by the requirements of the applicable regulatory agency(s).

Every reasonable effort will be made to prevent any oil or oily substance from reaching navigable waters. This protection will be provided to watercourses and dry streambeds whether or not they are considered to be navigable waters.

Emergency Response Procedures

In the event of an emergency involving an oil spill, refer to the Emergency Response Procedure in the "Plant Manual" for the Calpine Gilroy Cogen Plant, Procedure 3A.19. Follow this procedure as applicable to the incident at hand. A log must be maintained indicating the personnel and agencies notified of the event, the times of notification, and the information provided.

Notification Procedures

Reportable Event	Notify	Telephone
Oil Spill on Water (Navigable) (canals, rivers, creeks)		
Any amount that causes a sheen, Sludge, or emulsion	National Response Center Office of Emergency Services	(800) 424-8802 (800) 852-7550
Oil Spill on Land (Reportable Quantities are based on the number of barrels spilled).		
>One (1) Barrel	Office of Emergency Services	(800) 852-7550

A log must be maintained indicating the personnel and agencies notified of the event, the times of notification, and the information provided. A sample oil/chemical spill report record is provided at the end of this appendix. A follow-up report must be completed by the company and submitted by the Plant Manager to the appropriate agencies listed above.

Containment Procedures

In the event of an oil spill at Calpine Gilroy Cogen, qualified contractors will be used to adequately contain and clean up any spilled material as necessary. Control of spills will be assisted by vacuum trucks and other appropriate clean up methods. Telephone numbers of qualified contractors and routinely used waste haulers are provided in the Emergency Response Procedures in Plant Manual for the Calpine Gilroy Cogen Plant.

CALPINE GILROY COGEN
OIL/CHEMICAL SPILL REPORT RECORD

NOTIFICATION DATA:

SPILL SUBSTANCE: ______________________________

LOCATION OF SPILL:______________________________
____

ESTIMATED TIME OF SPILL:______________ AM/PM

AMOUNT OF SPILL:______________ ESTIMATION BASIS:______________

AMOUNT RECOVERED:______________ HOW RECOVERED:______________

DISTANCE TO WATERWAY (Name of waterway and its flow direction, if applicable:______________
____

DID SPILL GET IN WATERWAY?____ CAN MATERIAL GET INTO A WATERWAY?__________

STATUS OF CONTAINMENT (Give details of containment and cleanup procedure used).____________
____

INTRA-COM PANY DATA:

SPILL DISCOVERED BY:______________ TIME:__________ DATE:__________

HOW DID SPILL OCCUR? (Corrosion leak, equipment failure, broken pipeline, etc.)______________
____

NOTIFICATION LIST

AGENCIES CONTACTED BY:______________ TIME:__________ DATE:__________

NAME OF AGENCY (LOCATION)	PERSON CONTACTED
______________	______________
______________	______________
______________	______________

APPENDIX "B"

COMMITMENT OF PERSONNEL, EQUIPMENT, AND MATERIALS

COMMITMENT OF PERSONNEL, EQUIPMENT AND MATERIALS

Calpine Gilroy Cogen hereby commits the necessary personnel, equipment and materials to expeditiously control and remove any harmful quantity of oil discharged from company equipment.

The necessary personnel, equipment and materials will be provided directly by Calpine Gilroy Cogen and/or from capable contractors.

In the event of a spill, the procedures outlined in the Emergency Manual will be followed to ensure that every reasonable effort will be made to contain and clean up the spilled material as rapidly and as thoroughly as possible. Cleanup procedures will be designed to meet the requirements of the applicable regulatory agencies.

____________________________ Date:____________

David B. Pearson
Plant Manager

APPENDIX "C"

SPCCP SITE PLAN

SECTION 16.0 TRANSMISSION SYSTEM ENGINEERING

The project will conform with Title 8, High Voltage Electrical Safety Orders, CPUC General Orders 95 (or NESC), CPUC Rule 21, PTO Interconnection Requirements and National Electrical Codes.

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